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WAR WOUNDS AND THEIR TREATMENT*

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It is appropriate that we should direct our attention to the consideration of some of the possible effects which the dangers of war may bring to animals, for by so doing we will be better able to relieve much suffering if the need for our services should arise.

At the moment it does not look as if horses and mules are likely to be employed to any great extent in field armies, but if expansion of these forces is great, the call for veterinary officers may arise. Apart from casualties likely to occur among army animals, there is now the possibility that animals belonging to civilians may suffer during air raids, so even those of us who are prevented by age from undertaking active service in the forces may have similar work to do at home.

The subject which I have to introduce is an immense one, so, with the limited time at my disposal, much of what I intend to say will deal largely with the treatment of war wounds based upon experience in the Great War and consideration of the advances which have developed since.

CLASSIFICATION

War wounds may be classified according to the type of missile which has caused them : thus, we speak of rifle, shrapnel, high explosive and bomb wounds, but it should be kept in mind that the number of wounds met with in army animals due to such missiles forms only a small proportion of the total casualties classified as " wounds."

The classification which is based upon the clinical appearance of wounds—incised, lacerated or contused lacerated, punctured and complicated—can equally well be applied to wounds caused by war missiles or the various accidents which befall animals. The term " complicated wound " is capable of a very wide application and is best explained by mentioning examples, *e.g.*, a compound fracture, which is a wound of soft tissues complicated with a fracture of a bone ; an open joint, which is a punctured or lacerated wound extending into a joint.

Another classification of war and accidental wounds divides them all into two supreme classes : (1) contaminated wounds and (2) infected wounds.

As much of modern practice in treatment of wounds depends upon the determination into which of these two classes a particular wound belongs, it will be as well for us to have a clear understanding of what the terms " contaminated " and " infected " mean when applied to wounds.

The greatest harmful influence which hinders healing of accidental wounds is the presence of micro-organisms, particularly the pus-forming organisms, staphylococci and, to a less extent, streptococci. At the time a wound is inflicted micro-organisms gain access to the exposed lacerated surfaces, but it is important to realise that for a time they are on the surface of the damaged tissues and limited in number. Such a wound at this stage is a contaminated wound.

Before long these organisms begin to multiply and penetrate from the surface of the wound into the surrounding tissues, and the wound is then said to be an infected wound. The greater the amount of contusion and laceration of tissues, especially if grossly contaminated foreign bodies like pieces of bomb or shell casing are buried deeply in the tissues, the better can micro-organisms multiply and produce serious septic infected wounds.

TREATMENT

The first problem to be considered when confronted with an injured animal, particularly if the animal is required for transport purposes, is whether restoration of function of the damaged part is likely to be complete or nearly complete, for if not, then it is better to destroy the animal at once and save needless suffering and expense. Many of the complicated wounds will necessitate immediate destruction. There always will be cases difficult to assess at the outset, and it may only be after a period of treatment that we can come to a decision to persevere with treatment or destroy the animal.

Usually, some form of first-aid treatment has been given before we see a case, but except for minor wounds and commonsense efforts to control haemorrhage which may threaten the life of an animal, the less wounds are interfered with by inexperienced people, the better. We may occasionally be in time to save life by ligating a large bleeding vessel in a wound, but beyond this the deliberative treatment of wounds requires as much care as we would give to a definite surgical operation, if the best results are to be obtained.

CONTAMINATED WOUNDS

One of the great advances in human wound treatment which originated during the last war, was the realisation that, if casualties could be got to an operating theatre while a wound was still merely a contaminated one, it was often possible to convert a severe lacerated wound into a clean one free from infection which could be sutured up completely.

* Presented to the Scottish Metropolitan Division, N.V.M.A., at a meeting held in the Royal (Dick) Veterinary College, Edinburgh, on October 11th, 1939.

Even when it was impossible to bring the surfaces of a wound together on account of loss of tissue, the same early excision of contaminated surfaces was done.

To this end casualty clearing stations, where operative surgery could be done, were established just outside the zone of actual battle, so that cases were capable of being operated upon within a few hours after their occurrence, before infection had begun to spread. Under six hours the method gave the best results, but beyond this the results were proportionally poorer. After anaesthesia complete excision of exposed wound surfaces was carried out with as much care as would be bestowed on any major operation, instruments used for the purpose being constantly discarded or re-sterilized. The ideal of complete eradication of all contaminated tissue cannot always be achieved, but it was recognised that the natural defences of the body were often capable of overcoming a slight amount of infection without a sutured wound breaking down.

This explains how occasionally accidental wounds in animals sutured early without much regard for surgical cleanliness sometimes heal without suppuration, but such exceptions are generally a surprise. Under field conditions, most of us engaged in the last war realised that suturing of wounds of horses was a sheer waste of time, so did not do it. If, however, horses should again come to be used in the army in large numbers, and it is possible to organise a rapid evacuation within 12 hours to casualty clearing stations, these stations should be so equipped and staffed as to make it possible to apply modern surgical methods in the treatment of wounds.

Septic Infected Wounds

The ritual of daily dressing of septic wounds with antiseptic lotions is still the common method employed, largely because of the faith most people have in the power of antiseptics to destroy organisms in wounds.

In veterinary practice we still have some who believe in the efficiency of astringent wound lotions and the irritant antiseptics such as tincture of iodine, perchloride of mercury, etc., but most have followed the tendency which developed during the last war to use less irritant antiseptics such as hypochlorite solutions (Eusol, Dakin's Solution), Bipp, one or other of the flavines, Dettol, etc.

It is now beginning to be realised that much of the undoubted success of hypochlorites and Bipp in the treatment of wounds lies not so much in their antiseptic powers as in their low toxicity, thus allowing the healing process to go on unhindered and the diminished tendency to interfere with wounds once the method has been started.

A method of treatment which is now exciting great interest is known as the Winnett Orr method. Winnett Orr was an American surgeon who was confronted at the end of the Great War with the problem of moving some of his cases of severe compound fractures to the United States before the fractures had healed. He simply packed the wounds with sterile vaseline gauze and buried the wound and the two adjoining joints in a plaster of Paris cast. It has taken another war, the recent Spanish War, to bring home the efficacy of the Winnett Orr method of treating wounds, though for a number of years the method has been well known in the treatment of chronic osteomyelitis.

Trueta, who was in charge of a hospital in Barcelona at the time of the air raids on that city, has recently published a small handbook[1] which will well repay study, as many of the details of treatment of wounds of human beings can readily be applied to animals. He applied the Winnett Orr treatment, with slight modifications, on a large scale, and the success of the method can be appreciated from the figures he gives of the results obtained in 1,073 cases of open fracture of the limbs : 976 gave good or satisfactory results, 91 were bad results, and only six died. These figures are all the more amazing when we study the description and illustrations of typical examples of the wounds treated, many of them with shattered joints as well as bones. Whereas formerly amputation was the chief hope of saving life by stemming the progress of infection, he shows that by the methods he adopted many patients are now able to expect a good functioning limb at the end of treatment. It should be understood that the methods of treatment Trueta adopted apply equally well to wounds with or without fractures of bones, though naturally those where bones were involved provided the more spectacular successes.

The method of immediate treatment of war fractures as carried out by Trueta is best given in his own words :—

" 1. Adopt surgical treatment as soon after the occurrence of the fracture as possible. The type of anaesthesia must depend on the situation of the wound and the condition of the patient; it may be, according to circumstances, general, regional or spinal.

2. Once the patient is anaesthetised, thoroughly wash the entire extremity, and the wound with water, soap and a nail brush, until the whole is completely clean and the wound itself is bleeding; shave all hair. Paint the surrounding skin with a weak alcoholic solution of iodine, without touching the wound in any circumstances.

3. Excise the skin edges of the wound, remove all contused tissue and widen the wound as much as may be required. Excise carefully and unhesitatingly all non-viable muscular and cellular tissues, noting in particular the colour of the injured muscles, their contractility on stimulation with forceps and their capacity to bleed.

4. Open up the neighbouring cellular spaces affected by the contusion and, where necessary, incise the soft tissues, following up the cellular spaces in the depths of the wound, always keeping in mind the need for adequate drainage. Remove any haematoma present.

5. Remove the majority of bone fragments that are completely denuded of periosteum or displaced, and all foreign bodies found at the site of fracture. There is no need to be concerned much about any pieces of bullet that are difficult to locate; but it is most important to excise carefully all foreign organic matter (pieces of clothing, wood, etc.). The procedures described above—namely, the removal of all foreign matter, the excision of all the tissues immediately surrounding the wound, including devitalised soft parts in the vicinity, and the opening up of cellular spaces—are known technically as débridement.

6. . . . . .

7. Once the fracture is reduced firmly dress the wound with sterile gauze and immediately immobilize with plaster, including the two adjoining joints if possible.

8. Give an injection of tetanus antitoxin."

In some few cases where wounds were relatively un-contused and were excised within six or seven hours, he inserted a few interrupted sutures to allow of drainage between them before enclosing the limb in a whole plaster of Paris cast. On no account should sutures be inserted if there is the slightest tension, or where there is doubt about the vitality of the tissues. The immobilisation of the part by the closed plaster of Paris cast not only supports fractured ends of bones, but protects the injured soft tissues, especially the muscles, and thus prevents the spread of infection and absorption of toxins from wounds; in other words, it provides absolute rest of the part.

The closed plaster cast was also employed in the definitely septic infected wounds where the initial treatment had to be confined to the removal of foreign bodies and the provision of good drainage by enlarging the wound. The only exceptions not favourable to the application of plaster casts were cases where an acute cellulitis was already established or where there was a definite anaerobic infection.

These closed plaster casts were left on for long periods; premature removal, or even the making of a window, served to exacerbate local infections. Winnett Orr advises leaving the first cast on for as long as a month and the second for one or two months, but in Spain Trueta found the smell so intolerable to the patient that the first cast had to be removed after 10 to 15 days, though the second could be kept on from 20 to 30 days.

The only radical change Trueta made in Winnett Orr's method was that he employed sterile gauze instead of vaseline gauze, contending that the plain sterile gauze had a beneficial suction effect in the early stages.

The important lessons we learn from the Winnett Orr method of treating wounds are :—

1. Antiseptics are not necessary to promote eradication of infection from wounds.

2. Infected wounds do best when allowed to " stew in their own juice."

3. The drainage of infected wounds to the surface must not be neglected.

4. The more completely a wound can be immobilized, the less risk there is of infection and toxins spreading by the blood and lymph streams.

Superficial Wounds

Fortunately there are many superficial wounds of every-day occurrence which do not require such drastic treatment as the Winnett Orr method envisages, yet if neglected or improperly treated they may be followed by serious incapacitating complications.

Superficial wounds, if seen early, can be dealt with by thoroughly washing them with soap and water, using a sterile nail brush to get rid of contamination, and any shreds of devitalised tissue should be removed with scissors. Sutures can often be inserted and the wound protected by a sterile pad of gauze and a bandage.

In the Clinical Department of the Royal (Dick) Veterinary College surprisingly good results from this soap and water method of treating superficial accidental wounds have been obtained in dogs and cats when they have been brought within a few hours of an accident.

If delay has occurred over 12 hours, beyond cleaning up the area around the wound, do not handle the wound roughly but merely apply a moist wet gauze dressing, which should be kept firmly in contact with the area by means of a covering of cotton wool and a bandage. This dressing promotes by its suction effect separation of the limited amount of necrotic and infected tissue, while the gentle pressure prevents excessive oedema around the damaged area.

The moist wet dressing should be what its name implies—moist, not sopping wet—or its effect is harmful by promoting sodden granulation tissue. The material of choice as a wet dressing is gauze, four or five thicknesses at least, wrung out as dry as possible from 1-1,000 acriflavine or, occasionally when an area is oedematous, out of a hypertonic saline solution, such as saturated magnesium sulphate or sodium chloride.

Punctured wounds of the feet were by far the commonest form of injury Veterinary Officers had to treat in the last war, and if horses should come to be used again in war, there is no more important duty every Veterinary Officer should be capable of performing than the efficient treatment of such wounds.

Most of these wounds are superficial injuries going no deeper than the matrix of the hoof, and heal quickly if properly treated, but if wrongly treated, the complications which may arise from spread of infection may be serious. The large number of horses which suffered from quittor in the last war were to a great extent a reflection of inadequate treatment of punctured wounds of the feet in their early stage. Some of these punctured wounds were due to careless shoeing from too close nailing, but the majority were due to nails or other sharp bodies penetrating the frog or sole. During the winter of 1916 the number of horses incapacitated in this way was tremendous; in a transport unit of about 70 horses I recollect treating eight horses lamed in one day from picked-up nails.

The trouble arose from the wood of packing cases in which rations for the troops were received being burnt in field kitchens without removal of the nails beforehand. Fires were lit in the field kitchens just before leaving transport lines many miles behind the firing line, and as the kitchens rattled along the roads each night the roads became strewn with nails which fell through the fire bars. Another factor which indirectly affected the casualty rate was the weather. After rain, when field tracks or water-bound macadamised roads were drying and in a sticky state, horses' feet were more liable to injury because nails and rifle cartridges tended to stand on end.

It is only possible here to touch very superficially on the problem of treatment under field conditions, but even under the most adverse conditions of weather these wounds can be dealt with satisfactorily :—

1. Have all cases of punctured feet reported at once. A horse goes lame as soon as a nail enters the matrix, and usually the driver or rider discovers it sticking in the foot and withdraws it. Following the removal of the nail the horse may go sound, but if the puncture is left untreated, lameness will again develop some days later, depending upon the virulence and amount of infection which gained entrance at the time of injury.

2. Before starting treatment, arrange for the horse to be stood on some firm hard standing, so that the injured foot can be kept free from mud and the chances

of dressings becoming saturated with moisture afterwards lessened.

3. Every punctured wound of the foot must have the track through the horn opened, so as to leave a thin wafer edge of horn at the point of penetration of the matrix by the nail, or if an abscess has already developed, after removing all under-run horn the edges of the horn surrounding the exposed matrix should be well bevelled. Horn left thick and unyielding around exposed matrix favours the growth of oedematous granulation tissue.

4. Put on the shoe, if it was removed to facilitate the operation on the foot, as it is easier to keep dressings in place and protect them from contamination.

5. A moist wet dressing, preferably of gauze wrung out tightly from some non-irritant antiseptic solution, should be applied to the exposed matrix; over this place a small pad of dry cotton wool and then the under surface of the foot can be packed with tow, which can be made into a waterproof protective layer by means of Stockholm tar, oil, or cart grease. Further protection is provided by a slip sole of thin tin, which at the same time maintains the dressings in close contact with the exposed matrix.

6. Maintain the moist dressing until by inspection you are satisfied that no further necrotic tissue or suppuration is present and the matrix has a healthy covering of firm horn.

Failure to open penetrating wounds of the hoof properly and maintain drainage until all necrotic tissue has been thrown off was the reason for much unnecessary loss from chronic lamenesses, which led to many horses having to be evacuated in the last war to Base Veterinary Hospitals, where they provided enthusiastic surgeons with many opportunities for quittor operations.

Reference

[1] "Treatment of War Wounds and Fractures: with special reference to the closed method as used in the War in Spain." J. Trueta, M.D. pp. 143; 48 figs. 8s. 6d. net. London: Hamish Hamilton Medical Books. 1939.

INDIAN MULES IN THE BRITISH LINE

"The Indian mule-train which arrived a few days ago in the area held by the British Expeditionary Force is making steady progress towards the forward position," states the *Times* Correspondent on the Western Front, in a message, dated January 11th, which proceeds: "Detachments have already entered the belt of territory known vaguely as the British line, but which really consists of a series of defensive systems zig-zagging across an area several miles in depth.

"The mules are in excellent condition. Although they are small beasts they are full of mulish exuberance, which they show off by kicking vigorously on any provocation. They are capable of carrying heavy loads, and appear to be undismayed by the intense cold. The Indian drivers, marching smartly by the side of their charges, seem to be quite as hardy. They are highly specialised troops and know their business well. They seem able to quell with a word, or even a glance, any symptoms of mulish mutiny."

* * * * *

It has been decided not to hold the National Pony and Arab Horse Show in 1940.

The Royal Welsh Agricultural Society have decided that the Royal Welsh Show shall not be held until the Council, on the recommendation of the emergency committee, may direct. The position will be reviewed by the Emergency Committee in a year's time.

THE PREVENTION OF FOOT INJURIES TO HORSES IN TIME OF WAR

R. C. G. HANCOCK

Beaconsfield

During the battle of the Somme in the autumn of 1916, a combination of circumstances led to an increase in the terrible wastage of horses from foot injuries in the artillery brigades engaged, to one of which I was acting as veterinary officer. It was known that an average of 400 cases of foot injury occurred weekly, reaching during the time of which I am writing a height of 800 a week *admitted to hospital*.* First, not only were the roads appalling, where there were roads, but they were richly sown with nails throughout the forward zones. The reason for this was the use of the wooden ration boxes when emptied, as firewood. These, burnt in the grates of the field kitchens that were traversing these roads, concurrently with the movement of infantry units, shed the nails that once held these boxes together, from their grates, as they passed along. Thus was created a rich source of foot injury. Add to this the conditions encountered once a horse quitted the road for the vestigial tracks deep in mud, with invisible strands of barbed wire beneath the surface, and innumerable other buried objects of warfare capable of inflicting punctured wounds, then it is not difficult to explain why the incidence of foot injuries was so high. Only those who know the difficulty of fitting a green remount into a gun team can appreciate the feeling of drivers and officers who daily watched the departure to base hospital of animals whose training to act in concert with five other horses had meant so many hours and weeks of careful training. For, difficult enough as foot injuries are to treat in clean surroundings, it was out of the question to attempt treatment where the sick line was from 3 to 30 inches deep in that peculiar stinking mud that we who laboured in it recollect so well.

Our weekly sick returns showed a vast preponderance of "picked-up nail" as the cause of disability. And as the impossibility of getting ammunition and rations to the gun positions, in limber or G.S. wagon, became apparent, with the widening and deepening of the mud, the use of pack animals became the order of the day. These, heavily laden, plunging about in uncharted bogs, often in darkness, were the victims of greatly increased casualties. I have myself on more than one occasion seen an animal that had wandered a little off to one side or the other of the track sink slowly until almost out of sight, incapable of helping itself, or being helped.

At the time, to us with the front line troops, it seemed as though those in high places were doing nothing about the nail-strewn roads, and as no one could do anything about the mud, the only way to solve the problem of foot casualties was to find some means of reinforcing the sole of the hoof against puncture. For it was the sole rather than the frog that was most frequently injured, and nearly all the cases in pack animals involved the fore feet. This I take it may be explained by the fore feet taking most

* History of the Great War, Veterinary Services. Blenkinsop & Rainey, 1925. pp. 540-541.

of the support while the hind feet were responsible for propulsion and thus escaped the forceful downward contact with the puncturing agent. The indiarubber-like consistency of the frog appeared to possess considerable protective powers under these conditions.

I will not detail the preliminary trials that were made to find a satisfactory means of protecting the sole of the foot. It suffices to say that, with the help of a very intelligent and enthusiastic farrier sergeant, many horses were shod and sent up the line protected by plates nailed on under the shoes. Metal plates cut from such things as ration tins, brass shell cases and corrugated iron sheet were all tried. All proved to have a very brief life. A plain plate, it was quickly found, apart from the impossibility of keeping the sole and frog healthy, was liable to be sucked off together with the shoe. When a V-shaped piece was cut out to allow the plate to lie close to the sole, leaving the frog uncovered, the life of the plates was enough to encourage us to go on searching for a suitable material. This was eventually found at an ironmonger's shop in a French town. Whereas every other sheet we had used had shown signs of splitting with subsequent rapid disintegration, this French iron was, while stiff enough to keep its form, sufficiently ductile to dent only and not crack under working conditions. From being content if a plate would last a week, we could now expect most of them to last out a shoeing, and so the procedure became practicable on a larger scale. Eventually, and for the rest of the time we were in action, I was able to keep the four batteries and ammunition column of my brigade shod with these plates. It need not be imagined that this was an easy task. Farriers are human, and only constant vigilance will ensure that the work is properly done. The task of inspection at frequent intervals became less exacting when the remarkable drop in foot casualties became obvious, and the officers of the unit began to busy themselves to see that the work was carried out in a proper manner; so much so that in 1917, when the brigade was engaged under similar conditions to 1916, I was asked by the Divisional Artillery Commander* to demonstrate the method to the shoeing staff of the whole divisional artillery. This is a separate and a sad story of disillusionment that has no place here. It is enough to say that so far as my own brigade was concerned we had no less satisfactory results than those of the preceding year.

It is a matter of great regret that all my papers relating to these experiments were lost in the confusion of the German advance of 1918, and, unless the War Office possesses the originals of my contemporary reports, I fear there will be no satisfactory statistics for the reader, beyond my present assurances.

Here is one story of the sort of difficulties one came up against in attempting to get help in this task. When on leave early in 1917, I spent some time wandering round the Ministry of Munitions with a sample of the metal sheet that I had found successful, to see if I could discover an expert who could label its characteristics, so that it could be procured with certainty. I was at last led to a most charming and helpful metallurgical chemist, who not only identified the material, but later wrote to me that he was getting a Welsh ironworks to send out to France a malleable iron sheet that he was quite sure possessed even more suitable properties for my purpose. Nothing happened for five months, and then one day the adjutant of the brigade handed me an enormous bundle of papers that had proceeded in leisurely manner from the harbour authorities at Havre through innumerable offices to myself. At each halt in its progress a new sheet of paper had been attached with the mystic words, "passed to you for necessary action please." The essential sheet No. 1, stated in effect that it wanted to know why this officer was engaged in exporting material illegally from Great Britain, and if on the other hand it was a legal transaction, what was to be done with the bundle of iron sheet. I took what appeared to be the "necessary action." A month later the sheaf returned, swollen from one-and-a-quarter to one-and-a-half inches in thickness. The essence of its increase was that the whereabouts of the said sheets of iron was no longer capable of being ascertained. This was only one of many such disillusionments that eventually caused my retirement from the field of invention, certainly sad, possibly wiser for the experience.

As the horse in Western warfare is to all intents and purposes a military relic,* the following description of the technique employed in shoeing horses with these protective plates can have but a museum interest.

1. The fore feet only were protected, for reasons already given.

2. The protective plate must be prepared from a special malleable sheet iron of from 14 to 16 gauge.

3. In addition to his usual tools the skilful smith need only be provided with a large pair of tinman's shears, for cutting out the plate from the raw material. It is much easier to use these if one handle has its end turned down at right angles, whereby it can be fixed in one of the holes in the anvil. The right hand operates the other handle of the shears so fixed with far greater ease, and the outline of the plate can be quite easily cut out in this way.

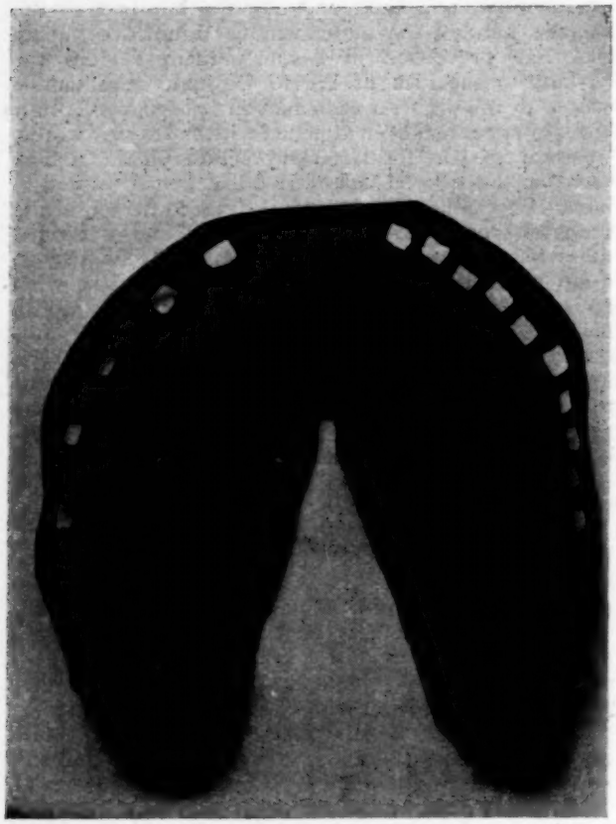
4. After the shoe has been fitted to the foot, it is used as a pattern while its outline is scratched on to the plate. The plate is then cut out with the shears. The distance from the toe clip of the shoe to the frog is measured, and at the corresponding point measured along the centre of the plate a clean cut circular hole, about one-eighth-of-an-inch in diameter, is punched. The hole at the apex of the triangle that is to be cut out to expose the frog is important, for in its absence the iron is apt to start a split at this point. The triangular frog space is then cut away.

5. The plate, so far prepared, is now hammered until it lies in close coaptation with the sole surface. Final careful trimming of the frog triangle so that its edges lie accurately against the frog borders is done at this stage.

6. The nail holes are punched, using the shoe as a template. Finally, after placing the plate in position, the shoe is nailed on in the usual manner. Fitted in the manner described, it was found that these plates lasted out the shoeing in most instances. The photograph shows an actual plate, one of the first made from the French iron plate, that was removed after 25 days of daily journeys with ammunition to gun positions during the Somme fighting.

*Now Major-General Sir Alexander Wardrop.

* Information recently given in our Notes and News columns on the activities of the Anglo-French Purchasing Commission, and as to the arrival of the Indian contingent with horses and mules, indicates that this statement needs to be accepted with reserve.—*Editor.*



It is not until one sees the dents in these plates after even one journey up the line and back, that one realizes what punishing conditions the equine foot has to endure in work of this nature.

It would be a great pleasure at this point to acknowledge by name the farriers who so gallantly saw this thing through. But after nearly a quarter of a century, with no contemporary documents to help me, it is impossible to recall their names. And apart from two or three gunner officers whose energy and active help ensured the work being done, notably Colonel A B. Bethall, D.S.O., R.A., I regret there is no one else who I can here set down as having afforded me any encouragement in a very thankless job of work.

In view of certain criticism that was made to me when this article was in draft form, I ought to add finally that the brigade of artillery which I kept shod for months in the manner I have described, had no more than the usual complement of farriers, most of them civilians enlisted for the "duration." I feel very strongly that the summary professional opinion expressed in the histories of the 1914-1918 veterinary operations to the effect that shoeing horses with protective metal plates was found to be impracticable, is not entirely accurate. If my units had been inspected and my technique seen in operation at the relevant period, I cannot conceive how this dogmatic expression of official opinion could have been set down. It reveals lack of knowledge of what had been achieved in the firing line, under conditions of the very greatest difficulty. Why experiments at the base found its impracticability when it was practicable in Somme mud, would always have been incomprehensible to me, had I not later in the war taken over veterinary charge of a cavalry unit that had been detailed to experiment with my method two years previously. It was obvious from the description of what had been done, together with half-hearted supervision, that the experiment was carried out improperly and with no desire that it should succeed, by the shoeing staff of the unit concerned. This was admitted to me by both officers and shoeing staff who were concerned. As I know of at least two other units which experimented and reported to authorities in a like spirit, which would be only human nature under such circumstances, the adverse report of those in power at the time is to some extent explicable on these grounds.

THE VETERINARY RECORD
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WAR WOUNDS

TIMELY reference to war wounds and their treatment is made elsewhere in this issue, and it behoves those of us who are likely to be entrusted with that treatment to review the subject in the light of modern knowledge. With the arrival in France of horsed Indian units, and the formation at home of mounted yeomanry regiments, coinciding with the purchase of several thousand horses, it does seem probable that the Royal Army Veterinary Corps will again be called upon to function in this as in the last war.

That the use of animals for warfare is not likely to be general, is perhaps a source of comfort to many of our countrymen, large numbers of whom have always deplored that animals should be made to suffer for the evil-doings of man. Incidentally, however, we have long entertained considerable doubt as to the wisdom of wholly mechanising an army when it is borne in mind that mechanical vehicles are not suited to all kinds of armed conflict or indeed to the variations of terrain over which battle or siege warfare may take place. The German army authorities must hold a similar view when we reflect upon the huge numbers of horses they have purchased from all conceivable sources during the past twelve months. With the development of aerial warfare, the casualties among such animals as are employed, are likely to be more severe and more numerous, *pro rata*, than was the case in 1914-18, and it is as well that we should at once revise our ideas and be prepared with tried and recommended methods of treatment in order that both wastage and suffering shall be reduced to an absolute minimum.

One fact, at least, seems to have emerged from observations made in the Great European and the Spanish Wars, and that is the retarding effect upon healing exerted by the too liberal use of water, the application of irritant antiseptics, or by the excessive interference with wounds. It has been found in war, and has since been proved in private practice, that one may do too much to a wound. Provided that liberal drainage is effected, after very complete

" débridement," it appears that a severe wound may even be enclosed in a plaster cast for as long as one month.

Professor Mitchell, in his address to the Scottish Metropolitan Division (reproduced in this issue) gave details of the methods for dealing with compound fractures and severe lacerated wounds, as expounded by Winnett Orr in the U.S.A., and by Trueta in Spain, the essentials of which were immobilisation, drainage, and the salutary effect of serum rather than of antiseptics. These methods were applied to humans, but it does not at all follow that they would be equally successful, with animals, for obvious reasons.

We find it hard to believe that the total enclosure in a plaster cast of some of the contused or lacerated wounds, or of some compound fractures, as encountered in the lower animals, would not be fraught with dire consequences. The very fact that Trueta found himself obliged to remove such casts at the expiration of ten days because the stench had become so intolerable to the patient, makes one wonder how the surgeon could have felt sure that gangrene had not commenced. In the absence of a " window " in the cast, one may excusably ask how drainage was assured.

We learned a good deal during the last war concerning the treatment of wounds and other casualties, but with an intervening lapse of 25 years we are now about to find opportunity for making mass tests of all that has been extolled in the interim. There seems no doubt that by the end of the present war, we will find ourselves (no less than the entire animal kingdom) considerably enriched in knowledge by our experiences.

R.S.P.C.A. HELP FOR FINLAND

In a letter to Captain Fergus MacCunn, Chief Secretary of the R.S.P.C.A., Mr. G. A. Gripenberg, the Finnish Minister, says: " I have been informed that you were good enough to inquire whether the Finnish Government would care to accept assistance from your society for the benefit of horses and other animals used in the present war in Finland. I beg to express to you my most sincere, grateful thanks for your extremely kind offer, and hasten to let you know that such an assistance would be most welcome. I am sure that my Government will highly appreciate the readiness of your society to contribute to alleviating the sufferings of animals used in our war. I will communicate your kind offer to my Government and await their instructions."

* * * * *

The Imported Cattle (Marking) Order, 1940, made by the Minister of Food on Monday, takes effect at once. It provides for the marking of imported cattle similarly to that previously prescribed under the cattle subsidy scheme.

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Owing to the shortage of sausage skins cellulose paper is being used throughout Germany as a substitute (states Exchange), and the German Society for the Protection of Animals has issued a warning that many dogs and cats have died from acute indigestion after eating this *ersatz* covering.

CLINICAL COMMUNICATION

SOME NOTES ON
LEAD POISONING IN A GROUP OF AYRSHIRE HEIFERS

WILLIAM ROBB, F.R.C.V.S.,
GLASGOW, AND
DONALD CAMPBELL, M.R.C.V.S.,
RUTHERGLEN

Cases of lead poisoning in cattle are fairly common, and have been so frequently described that it might seem unnecessary to record particulars of any further instances. The present report is offered, however, partly because the outbreak was traced to green paint instead of the usual red or white, and partly because, in the view of the writers, the chain of evidence appears to be more complete than is sometimes the case.

The animals affected were a group of eight pedigree Ayrshire heifers, of ages ranging from six to ten months.

On May 22nd, 1939, they were transferred from the field in which they had been grazing to another field which hitherto had been vacant. On the morning of May 25th one of the heifers was seen to be seriously ill with what was thought to be grass staggers, and died before veterinary aid could be obtained. After an official examination for anthrax had proved negative the carcase was buried.

Early in the same afternoon another of the heifers was found to be showing symptoms resembling those of the first, and professional assistance was summoned. In the meantime all the animals were removed from the field to the farm steading, where they were put together in a large shed.

Although little more than an hour elapsed before one of the writers (D.C) was in attendance, the symptoms in this second heifer had evidently greatly intensified in the interval. Now it would have been impossible for her to walk in from the field, four hundred yards away. She was standing, but barely conscious; one shoulder was pressed hard against the wall of the shed, supporting the animal, with the head turned well away to the opposite side. When forced away from the wall she moved in erratic plunges, circling always to the left, until fetched up once more by something she could lean against. To all appearances she was both blind and deaf, but in her general unresponsiveness it was difficult accurately to judge individual symptoms.

Of the remaining heifers three were at this time observed to be standing somewhat aloof, gazing dully at nothing. When stimulated to move they did so readily enough, but with some lack of precision. Sight and hearing did not appear to be affected. Nothing amiss could be seen with the other three heifers, except that when food was put before them they showed no interest in it.

There was no sign of faeces from any of the animals. The temperatures in general, both at this stage and throughout the period of illness, were not far from normal, varying at different times between 101° and 102·6°.

The condition suggested lead poisoning, and inquiry was made as to whether there was any possibility of the cattle having had access to paint. It was learned that an iron fence forming one boundary of the field had been painted about a month previously,

but as the paint was long since dried no thought of danger arose. Inspection of the field was not practicable at that time, but a provisional diagnosis of lead poisoning was made, and magnesium sulphate and potassium iodide were administered to all the animals. Since it was not certain when or whether confirmation of the diagnosis would be obtained, and there was always a possibility that the condition might be due to some other cause, each was given as an additional precaution calcium boro-gluconate and magnesium sulphate subcutaneously, and liberal doses of kaolin powder in milk by the mouth.

That evening the most severely affected heifer died after about two hours of what might have been either severe pain or dementia. *Post-mortem* examination showed a moderate degree of inflammation in the abomasum and small bowel. Samples were taken of the contents of the rumen, omasum, and small bowel: the two latter of these and a portion of the abomasum were submitted for analysis to Messrs. Tatlock and Thomson, analysts, Glasgow. (By mischance, the sample from the rumen was not sent.)

Thus two of the affected animals had died on the first day.

The remaining six were visited the following morning. All of them had purged, but there was little change to note in their condition except that the three which had seemed fairly normal the previous day were now decidedly more listless than before. Convenient to the shed was a small paddock into which the animals were driven for further inspection. They simply moved about the paddock aimlessly and made no attempt to eat the grass. During the afternoon the three which had been most obviously affected developed acute symptoms and died after about two hours of pitiful distress.

Until now only one of the writers (D.C.) had been concerned in the case, but from this stage onwards the other (W.R.) also was in attendance, and every step was taken jointly.

Post-mortem examination was made of the three heifers the day after they died. In one there was fairly acute inflammation of the abomasum and small intestine, the second had slight inflammation of the same organs, while in the third there was only a trace of abomasitis, with no lesion in the bowel. Samples of rumen contents of all three were sent for analysis.

A careful inspection was then made of the field in which the beasts had been grazing. A green-painted fence of upright rails, on which the paint was recent but perfectly dry, stretched for about one hundred yards along one margin of the field. The grass had been cropped close to the bottom of the fence for the greater part of its length, but where it had not been cropped it was freely spattered with green paint. There were patches of paint, six inches or more in diameter, on the turf at various points up to seven or eight yards from the fence, as if the residue had been dumped from paint cans, and also various discarded articles, such as pieces of rag, coated with paint. Several specimens from the field also were submitted for analysis.

Of the original eight heifers only three were now alive, and on the third day the most notable change in their condition was that all were definitely blind. Temperatures were approximately normal, faeces normal in appearance but scanty, and appetites completely in abeyance. They were being bottled twice daily with oatmeal gruel, milk, and switched eggs. The potassium iodide was continued until, about a week later, administration had to be stopped for some days on account of the onset of iodism. Blindness persisted for about a fortnight and then disappeared. Gradually the appetite returned, rumination was resumed, and at the end of six weeks it was considered that the animals had completely recovered. They had lost much condition, however, which was only restored very slowly. None of these cases of a subacute type ever showed any sign of the blue line in the gums which appears to be characteristic of chronic lead poisoning in humans. The conclusion is inevitable, however, that whatever caused the death of the other animals caused also the illness of those that survived.

Analysis of the various samples submitted for that purpose confirmed the clinical evidence of lead poisoning. Below are extracts from Messrs. Tatlock and Thomson's reports.

The first report refers to the heifer which died on the evening of May 25th.

Contents of Omasum.

We have made a careful chemical examination of this sample and we find it to contain 0·042 per cent. of lead. This quantity of lead is equivalent to 2·94 grains per pound.

The weight of sample submitted was 6·9 ounces.

Contents of Bowel.

Chemical examination of this sample failed to reveal the presence of any lead.

The weight submitted was 9·8 ounces.

Portion of Abomasum.

Chemical examination of this sample showed that it did not contain any lead.

The weight submitted was 2·5 ounces.

The second report gives analyses of rumen contents of the three heifers which died on May 26th, shown respectively as No. 1, No. 2 and No. 3.

	No. 1.	No. 2.	No. 3.
Lead, per cent.	0·0028	0·0098	0·004
= Lead, grains per pound...	0·196	0·686	0·28
	ozs.	ozs.	ozs.
Weight of sample submitted	16·3	17·8	15·7

It will be recalled that the first animal to be affected died and was buried before veterinary aid was called in. Authority was obtained from the Ministry of Agriculture to have the carcase of this animal disinterred, and four samples were taken for analysis, being contents of rumen, reticulum, omasum, and abomasum respectively. The third report gives the analyses of these.

	1st Stomach.	2nd Stomach.	3rd Stomach.	4th Stomach.
Lead, per cent....	0·08	0·112	0·224	0·100
Equal to lead, grains per lb....	5·6	7·84	15·68	7·0
Weight of sample submitted ...	ozs. 19·9	ozs. 6·3	ozs. 6·4	ozs. 4·2

The fourth report gives the analyses of material taken from the field where the animals had been grazing.

Report on four pieces of turf, one piece of rag, and one paper bag received. . . .

Turf 1.—This piece of turf was covered on the surface with a partially dried green paint. The paint was removed from the turf and analysis showed it to contain 6·89 per cent. of lead. The total weight of paint removed from the turf was 54 grammes, so that the turf contained in all 57·3 grains of lead.

Turf 2.—This piece of turf was similar to the previous one. The green paint removed from it weighed

66 grammes and contained 6·95 per cent. of lead. The total weight of lead on the surface of the turf was, therefore, 70·7 grains.

Turf 3.—The grass on this turf had a grey appearance. The grass was removed and found to be sticky and to be mixed with a greyish looking powder or sediment. Analysis of the grass showed it to contain 21·97 per cent. of lead. It would appear, therefore, that the grass had been in contact with a grey paint probably consisting of a white lead basis.

Turf 4.—The grass on this turf was of a brown colour and there was no visible evidence of either grey or green paint. Analysis of the grass, however, showed the presence of 1·89 per cent. of lead.

Rag.—The rag was of a grey colour interspersed with patches of green and had a texture consistent with the presence of partially dried paint. Analysis of the rag showed the presence of 30·59 per cent. of lead.

Apparently the rag had been used to wipe a grey paint consisting mainly of white lead. The weight of rag was 31 grammes, so that the rag contained in all 146 grains of lead.

Paper Bag.—On the surface of the paper were a few scattered spots of green paint. Analysis of the paint showed it to contain 9·24 per cent. of lead. The paint on the bag weighed 0·72 of a gramme, so that the paper bag contained in all 1 grain of lead.

The quantities of lead shown in the reports refer to metallic lead, but the analysts reported verbally that in the samples it occurred as lead chromate.

It is somewhat regrettable that in each animal separate samples were not taken from all four compartments of the stomach, so that analysis might have discovered whether there is any general rule governing the distribution of lead in the alimentary canal. Considerations of economy, however, forbade this. There seems to be no generally accepted view as to what should be considered a large quantity of lead, but it might be worth noting that in the first report the amount of lead found in the omasum was 2·94 grains per pound, while in the second report, where the samples were from the rumen only, the amounts of lead were by comparison small. In the third report the amount of lead, relatively speaking, was very large, with the omasum showing by far the greatest proportion and the rumen least of all. No proper comparison can be made from the information available, and the distribution of lead may in any event be subject to variation, but the point might be worth noting in future cases.

Canada's pig population is playing a big part in the nation's war effort. Over 500,000 hogs were marketed in October, the greatest number for any one month on record and 62 per cent. higher than October, 1938. The demand from the United Kingdom has been heavy and packers are speeding up operations to meet the demand. Increases in marketing occurred in every Province, especially in Western Canada, where live stock holdings are only now coming back to normal after serious depletion during the drought years. However, in Eastern Canada the greatest trend is toward more hogs, with demand good and feed prices reasonable.—*Scottish Farmer.*

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To assist farmers who have not facilities for ploughing-up heavy grassland, the Essex War Agricultural Executive Committee have arranged to purchase a number of horses and ploughs. These will be available for drawing water-furrows and, where necessary, for finishing off the work tractors cannot do in connection with stetch ploughing. The horses and ploughs are to be operated by the Maldon District Advisory Committee.

ABSTRACTS

[**TREATMENT OF LYMPHANGITIS WITH ABSCESS IN THE HORSE WITH "ANINSULIN."** (Trans. title.) Barral, Ph., Pecastaing, and Dusserre. (1939.) *Rec. Méd. vét.* **115**. 6. 332.]

Aninsulin is a product derived from insulin by either a heating process or by treating it in a specific fashion with formol. The insulin so treated loses the property of lowering the level of blood sugar but retains its trophic property.

The curative action of Aninsulin is most marked on those forms of lymphangitis with abscess formation. The abscess disappears rapidly and the swelling more slowly. On the other hand, treatment of chronic lymphangitis with Aninsulin gives uncertain results and it cannot be stated whether any amelioration is due to treatment or merely represents spontaneous cure.

In the cases which respond to Aninsulin treatment, *i.e.*, the more severe acute cases, the period during which the animal is unfit for work is reduced from five to eight weeks to about two weeks.

The method for using Aninsulin is by subcutaneous injection of 1 c.c. of 1 in 4 Aninsulin every two days until three or four injections have been given. At this stage often the animal has recovered.

D. McF.

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[**SULPHANILAMIDE AND STRANGLES.** Nye, E. L. *Vet. Bull. U.S. Army.* **33**. 96-97.]

A description is given of the use of sulphanilamide in a number of typical cases of strangles. Three doses of 75 grains of the drug were given daily for three days. A reduction of temperature occurred on the first day, and there was marked general improvement by the third day. No further treatment was required and the time for complete healing was much shorter than usual. No detrimental effects from the use of the drug are reported, and it appears that larger and more frequent doses might be employed with advantage.

D. D. O.

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[**A RARE ABNORMALITY OF THE LARYNX IN THE HORSE.** (Trans. title.) Schneider, R. (1939.) *Schweiz. Arch. Tierheilk.* **81**. 151-155. (1 photograph).]

A Swiss riding horse was noticed to exhibit a loud expiratory noise on exercise. No other symptoms, except an occasional loss of appetite, were noticed. Examination revealed an abnormality of the larynx, but no definite diagnosis was made. On *post-mortem* examination a congenital deformity of the larynx, with a rudimentary epiglottis and hypertrophy of the hyo-epiglottidean fold, was found. It is suggested that the noise was due to the expired air coming into contact with this hypertrophied area.

C. W. O.

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[**ON THE COLONY-TYPE OF STREPTOCOCCUS EQUI. III.—THE COMPARISON OF BIOLOGICAL ACTIVITY, VIRULENCE AND VARIATION BETWEEN THREE COLONY TYPES.** Umeno, S. (1937.) *J. Jap. Soc. Vet. Sci.* **16**. 28-31.]

From these studies the author concludes that *Str. equi* in its original form (Type G) is unstable and that in the course of prolonged subculturing it tends to change into what he calls the F type, through an F^1 phase. It sometimes also generates a C type. As

compared with the G type, C is stable but sometimes returns to the G form. The F type is the most stable and represents the final phase of variation of *Str. equi*. After several years, stock cultures of *Str. equi* will be found to have completely changed into the F type.

With the gradual change in type, there also occurred differences in the length of survival in culture, in the final *p*H of broth cultures, in bile resistance, methylene blue reduction, resistance to dyes and resistance to heat of the three chief types. All types gave uniformly negative results with sodium hippurate. There were marked differences in the virulence of the three types for mice and also in their toxin production as judged by intradermal injection of broth cultures in man and rabbit.

G. D.

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[**SPONTANEOUS ULCER OF THE STOMACH IN SEVERAL DOMESTIC ANIMALS.** Jenson, L. B., and Frederick, L. D. (1939.) *J. Amer. Vet. Med. Assoc.* **95**. 167-169.]

This report summarises a series of researches on the bacteriology of ulcer in the stomach in domestic animals. *Streptococcus viridans* was isolated from the stomachs of the pig, sheep, cow, and dog. These organisms showed no peculiarities of morphology and culture, but the similarity of the strains and their ability to reproduce ulcers or haemorrhages when injected into rabbits and dogs led the authors to the belief that they were primary invaders. The mode of infection is *via* the mouth. Ulcers in non-acid stomachs were diffuse and showed peripheral areas of necrotic tissue, whereas in the acid stomachs the lesions were small and usually free from necrotic tissue. The existence of ulcers had no appreciable effect on the pepsin-yielding properties of the pig's stomach when processed for commercial pepsin.

The incidence of ulceration, both healed and active, in some 34,000 stomachs examined over a period of eight years was: calves and cows, 1 in 80; sheep, 1 in 70, and swine, 1 in 20; of these the majority were observed in the later part of winter and spring months concurring with the seasonal distribution of other diseases.

C. W. O.

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[**ABSORPTION OF WATER FROM SALT SOLUTIONS IN THE LARGE INTESTINE OF THE RUMINANT.** (Trans. title.) Trautmann, A., and Asher, T. (1939.) *Deuts. tierärztl. Wschr.* **47**. 424-426.]

Two goats, each provided with a caecal fistula, were used. Varying concentrations of salt solution were introduced directly into the large intestines through the caecal canulae and the amount of water absorbed was estimated by the consistency of the faeces excreted after dosage. No attempt was made to determine the water content of the faeces; they were classified simply as pellets, " sausage-shaped " or liquid.

It was found that the amount of water absorbed was unaffected by the concentration of the solution introduced but that it was directly dependent upon the total quantity of salt in solution; in one animal 3 grammes of salt had no effect upon the faeces, 4 grammes produced " sausage-shaped " faeces and 5 grammes produced liquid faeces. In the other 6 grammes was needed to produce liquid faeces. It was also found that larger quantities of sodium and magnesium sulphate were required to produce diarrhoea than was the case with salt.

A. T. P.

N.V.M.A. DIVISIONAL REPORT

CENTRAL VETERINARY SOCIETY

The second meeting of the above Society to be held during the war took place at the Royal Veterinary College, Camden Town, on the afternoon of Thursday, December 7th, 1939, when again a good attendance was recorded. The programme provided was a very attractive one, the principal features being a topical Presidential address by Mr. H. E. Bywater and a most interesting contribution, for which Dr. I. A. Galloway was responsible, on foot-and-mouth disease—this being made by way of comment on an informative cinematograph film prepared by the son of Professor Magnusson, of Sweden.

Those present, in addition to the President, were as follows: Messrs. W. Brown, E. Clark, H. S. Dunn, W. G. Evans, Miss C. N. Ford, Colonel H. Greenfield, Dr. Tom Hare, Messrs. S. L. Hignett, S. F. J. Hodgman, Miss R. E. Holman, Messrs. J. W. H. Holmes (Hon. Sec.), H. T. Matthews, G. Dunlop Martin, Dr. J. McCunn, Professor W. C. Miller, Messrs. J. S. Steward and A. Thomson, Miss O. Uvarov, Messrs. G. M. Vincent, S. B. Vine, J. D. Williams, A. N. Worden and T. L. Wright.

There were present as visitors: Messrs. N. S. Barron, F. A. Crowhurst, R. C. U. Fisher, Dr. I. A. Galloway, Messrs. J. Keppie, H. D. Land, C. O. Longley, W. R. Muir, D. D. Ogilvie, T. J. Reynolds, H. D. Senior and J. H. Wilkins.

The minutes of the June meeting of the Society, having been published in the *Veterinary Record*, were taken as read and were confirmed and signed.

Correspondence.—(1) From the following Fellows, apologising for their inability to attend the meeting: Major G. W. Dunkin, Mr. Nevill King, Major H. Kirk, Messrs. J. F. Macdonald and J. W. McIntosh.

(2) From the Secretary of the N.V.M.A. seeking assistance from members of the Division in the efforts which are being made, in co-operation with the manufacturers, to restrict the sale of a certain product to veterinary surgeons—it having been reported from Northern Ireland that there was a serious leakage through chemists to laymen of this agent (specified), the use of which should be exclusively in professional hands.

(3) From Mr. R. E. C. Bullen, of Rottingdean, Sussex, intimating his desire to resign his membership of the Society. This letter was received with much regret as Mr. Bullen was a valued member of the Society and of long standing, and appreciative acceptance was made of Mr. Scott Dunn's offer to see Mr. Bullen with a view to securing a withdrawal of his resignation.

Nominations.—Nominations were received of Miss D. H. Craddock, of 214a, High Road, Loughton, Essex (proposed by the Hon. Sec., seconded by Dr. McCunn), and Mr. J. B. Tutt, Jun. (of the Royal Veterinary College) (proposed by Mr. J. B. Tutt, seconded by Mr. J. F. D. Tutt). The President observed, amid applause, that Mr. Tutt's nomination, proposed as it was by his grandfather and seconded by his father, was a pleasing incident, probably unique in the annals of veterinary history, certainly in the history of the Central Veterinary Society.

Cases of Interest

Mr. DUNLOP MARTIN said that he did not know whether any of them had tried the closed method of dealing with compound fractures, which was introduced by Dr. J. Trueta, of Barcelona, and which was dealt with rather extensively in the medical Press. [See also *Vet. Rec.* **51.** 50, 1446.—*Editor, V.R.*] He had had the opportunity of trying it some few weeks ago in a small sheep dog which was brought to him one Sunday morning. It had a large comminuted compound fracture of the middle of the upper third of the tibia; there was a nasty punctured wound on the inside which went right in amongst the fragments of the bone, which felt like a bag of pebbles. He injected 1 per cent. mercurochrome, disinfected the wound and closed it up under a plaster of Paris bandage. He took the first dressing off a fortnight later when he found the wound was doing extremely well. The last dressing was removed ten days ago; there was no complication of the joint and the leg had done very well indeed—it had all healed up, and the dog in great spirits after recovery from the anaesthetic.

The PRESIDENT said that he was sure that they were all grateful to Mr. Dunlop Martin for bringing that form of treatment to their notice.

Dr. TOM HARE thanked Mr. Dunlop Martin for reporting his case and for drawing attention to Dr. Trueta's paper. He hoped the *Veterinary Record* might secure permission from the Royal Society of Medicine to publish either in full or in abstract Dr. Trueta's paper and the discussion which followed it. He particularly mentioned the discussion because it introduced the important question of the infection of compound fractures and lacerations by the haemolytic streptococcus. What should the veterinary surgeon do if he should get a badly soiled wound some hours after the infliction of the damage? Present experience seemed to emphasise the importance of administering two things: the first was prontosil and the second was an autogenous or stock vaccine made from the group of haemolytic streptococcus infecting the animal. His interpretation of Dr. Trueta's thesis was that the plaster secured adequate immobilisation of the fracture, but the mortality in these cases was largely due to secondary infection with the haemolytic streptococcus.

It would be very valuable if clinicians would try out this treatment and report their experiences in the *Veterinary Record*. There was no doubt that the cellulitis following thorn wounds of horses gathered in hunting was due to infection by the beta haemolytic streptococcus.

Mr. DUNLOP MARTIN observed that the subject of the case he had quoted belonged to an A.A. company near the coast and he received it for treatment from 12 to 15 hours after the infliction of the injury. They could therefore imagine that the whole thing was very dirty. The animal suffered very little pain throughout.

Mr. T. L. WRIGHT said that he would like to call attention to a case visited by him about a fortnight previously when he got a message from a groom saying that a pony had been up from grass two days and that he thought it was suffering from lockjaw which had set in during the night. On inspection he found that the animal had the jaws rigidly locked; there was marked hyperaesthesia. The head could be lifted quite easily but when it was pushed up there was no sign of the membrana nictitans protruding across the eyeball. As he was invariably very sceptical of diagnosing tetanus in the absence of that symptom he felt very puzzled about the case: the appearance of the animal was typical of one just up from grass—the coat was rough and shaggy and it was impossible therefore to find any wounds about it. The pony walked with a straddling gait. He did not think the case was one of tetanus, but he told the owner to report it to the insurance company and to keep the animal in a darkened stable and give it a sloppy mash; he would have administered calcium had he had any with him, but did not think that symptoms were definite enough to warrant tetanus antitoxin.

In the morning he was informed by telephone that they had had a bad night with the pony but that it was now quite normal. He went over and saw the animal and it certainly appeared to be fully recovered; it could move its jaws quite freely, and made complete recovery without any medicinal aid.

The PRESIDENT stated that he had seen two cases somewhat similar to that recounted by Mr. Wright: both of them occurred in forest ponies which had travelled a long way by rail and both recovered after calcium injections.

In further discussion of the foregoing cases Mr. DUNLOP MARTIN said that Dr. Hare had mentioned prontosil; he wondered if he had tried M & B 617 or M & B 693 as opposed to prontosil.

Dr. HARE replied that he was not qualified to give any opinion as to the relative value of these substances: he had used the term prontosil when he should have used the word sulphanilamide. When the wound was in plaster the supervention of cellulitis or bacteraemia might be acute; and if this occurred during the night, when one was not observing the animal, sulphanilamide might have a therapeutic value. The next point was that the vaccine plus the sulphanilamide had a definite synergic protective and curative value, which either product alone did not exert so well. Thus it seemed to him advisable to administer both the sulphanilamide and the beta haemolytic streptococcal vaccine at the outset of these cases of wounds and compound fractures for their combined prophylactic and therapeutic value.

President's Address

The PRESIDENT (Mr. H. E. Bywater) said that it was customary at that meeting for the President to occupy almost the whole evening (when the meetings were held in the evening) by giving them an address on the state of the Society and of the profession—but he did not propose to do this that afternoon; in fact, he must confess that he had not prepared a set address.

There were, however, a few points upon which he wished to touch and, first of all, he must say how deeply conscious he was of the honour they had done him in electing him to be their President: he could assure them that he would do all in his power to carry out the duties of the office to their satisfaction. In taking over the Presidency he had relinquished the Hon. Secretaryship of the Society and now that it was all over he would say quite honestly that he was not altogether sorry to be relieved of the work and to pass it over to the capable hands of Mr. Holmes. He hoped as the years went on Mr. Holmes would retain his enthusiasm for that work; after a few years, as he himself had found, one began to realise how much there was to be done.

They were meeting unfortunately during a period of war and he was very gratified at the attendance they had that afternoon, and ventured to express the hope

that all the members would do their best to help maintain the Society during the war. In regard to that particular meeting there was one very pleasing feature, namely, that they had had two very interesting case reports presented to them. The presentation of such reports was a very important factor in the success of their meetings and one which he hoped would be continued. He hoped that members would endeavour to bring forward case reports for future meetings.

Many veterinary surgeons were suffering from the effects of the war, and suffering financially : he thought most of them were affected in some degree, but one hoped that the conditions would brighten as time went on. He noticed that the Royal Army Veterinary Corps were asking for volunteers for other ranks and he hoped this was a sign that before long officers would be needed in the Veterinary Corps and that the R.A.V.C. would begin to regain some of the prestige which it had undoubtedly lost since the process of mechanisation of the army had begun in earnest.

With reference to the war, one thing stood out as far as the veterinary profession was concerned and that was A.R.P. for animals. He thought it was one of the outstanding tributes to the profession that veterinary surgeons had volunteered to do this work without recompense. (Hear, hear.)

He had mentioned the Society and the earnestness of his desire that they should support it and he now wished to say a word about the N.V.M.A. He trusted that there would not be a tendency for members of the profession to resign from membership of the N.V.M.A. During the last war the " National " went through a very trying time ; in fact, it was nearly shipwrecked on the rocks of the last war. It was mainly owing to the efforts of the late Dr. Bradley, Professor Buxton, Colonel Brittlebank, Mr. Male, Mr. McIntosh, Professor Wooldridge and other stalwarts that it was kept going, and now it had reached a position in which roughly two-thirds of the profession were members. He did offer a plea to any members of the profession who were not members of the N.V.M.A. to join. It was a duty that they owed to themselves and to their profession. The functions of the N.V.M.A. were different from those of the Royal College of Veterinary Surgeons, and here he might venture to suggest that members of the profession should make themselves better acquainted than they were in regard to the respective functions of those bodies.

If one were a member of the " National " one received the *Veterinary Record* ; he thought, in spite of its defects, the *Veterinary Record*, during the last year or two, had become a journal of which the profession could justly be proud. (Hear, hear.) It certainly had increased in size out of all knowledge since the last war, following which the N.V.M.A. took over the proprietorship of that paper. He would ask members who had interesting cases to report not to be afraid to send them up to the *Record*. The Editorial Committee would publish them if they felt like it, if they did not, they would not publish them—but he would ask his hearers not to feel aggrieved in that case. The *Veterinary Record* had to satisfy its readers and it did try to publish matter which would be of interest to them and, at the same time, reflect credit on the contributor.

With regard to the charities of the profession he felt that they, as a profession, were sadly lacking in this respect. Most of the other professions had charities which were well supported by their members. The veterinary profession had only two charities : one was the Victoria Veterinary Benevolent Fund, which the Central Veterinary Society endeavoured, at each of its meetings, to support by means of its collecting box ; the other was the National Veterinary Benevolent and Mutual Defence Society. He would deal with the latter first. He thought he was not misrepresenting the position when he said that the " Mutual Defence " had as its main function the defence of veterinary practitioners and as a secondary function benevolence. He thought it was essential that all veterinary surgeons, whether they were practitioners or otherwise—but certainly if they were practitioners —should be members of the Defence Society. One never knew when an action at law might be taken against a veterinary surgeon : he knew quite eminent members of the profession who had made what might be considered lapses (of course, they and ordinary members of the profession might be wholly innocent of any lapse) and had been sued in the courts. Law proceedings could be very expensive, and if members of the veterinary profession were members of the Defence Society they could apply, by right of membership, to the Defence Society to take up the case on their behalf and, in practically every case that Society undertook, the veterinary surgeon managed to win the day. Not only did the Society bear the expense but it had a wide membership and most of its members were prepared to give evidence on behalf of their unfortunate brethren without any charge. Any surplus funds were devoted to charity, so that this Society had a dual function. The great centre of its activities was in Manchester ; consequently, the " Mutual Defence " was stronger in the North and its exceedingly valuable functions were better known there and received greater support ; its greater recognition in the South was long overdue.

In the South they had the Victoria Veterinary Benevolent Fund, of which they probably knew more, which was devoted entirely to charity. Colonel Brittlebank, its President, had recently published in the *Veterinary Record* a letter appealing for donations for the special Christmas fund run by that charity. He (Mr. Bywater) felt, however, that greatly to be desired as was a generous response to this special appeal, it would be much better if those who had not done so would become members and give an annual subscription to the fund. One never knew what might happen, and it was his sincere wish that those who were present would never have to accept benevolence—which they could do whether they were members of the fund or not—but he did hope they would all join the fund.

Before he sat down he would like to thank them for their patient hearing and, at the same time, if he would not be regarded as unduly premature in doing so, to wish them the compliments of the season.

The President's address was heard with much appreciation—as the members indicated at its close—and, in response to an enquiry, he intimated that, inasmuch as he was aware that he had raised points on which others might wish to comment, he was prepared to waive the accepted rule that an address from the Chair was not open for discussion.

Dr. Hare said that he did not want to delay their hearing of Dr. Galloway's paper more than to make one comment on the President's address. He, personally, hoped the President would have offered the Society opportunities for discussing the effects of the

war upon the profession. He thought that provision should be made at each meeting, not only for case reports, but also for contributions on the experiences Fellows were obtaining through the war. As his hearers were aware, he had drawn some attention elsewhere to some economic effects of the war upon the profession. He did not want to pursue that point now, but he regretted that the Central Veterinary Society had allowed three months of the war to pass without having a discussion. He wished to emphasise that their fellow-members were not only city but also country practitioners. Veterinary surgeons, who were assisting N.A.R.P.A.C. and the organisation of its services in rural areas, had recognised a most serious omission, *viz.*, that there had been, as yet, no indication of the veterinary practitioner's place in the conservation and salvage of food animals which had been injured or killed as a result of enemy action. He had voiced his own views in the *Veterinary Record* but would like to hear the opinions of his colleagues on this important question. He would therefore urge the President to provide means at each meeting of the Society whereby problems arising as a result of the war could be discussed and the views of the Society could be brought prominently before the Council of the N.V.M.A.

The President, in reply, said that he wished to point out to Dr. Hare that item 7 on the Agenda ("Any other business") did provide an opportunity for members to bring forward any matters of importance. He thought, however, that the Society should know that the Council of that Division had considered the economic effects of the war upon Veterinary practitioners and that, as a result, their Secretary had written to the N.V.M.A. bringing that matter before them and offering certain suggestions from that Society into which the "National" were looking. In consequence of that they might know that in the previous week's *Veterinary Record* there appeared a note asking that veterinary surgeons who wished to join a belligerent force should write to the N.V.M.A. in order that, if there were certain veterinary surgeons who desired to join the forces, the Ministry of Labour might be approached to raise the ban at present placed upon veterinary surgeons joining the army, having regard to the fact that theirs was a reserved occupation. That was an indication of one line of action taken by that Society and which had been followed up by the N.V.M.A. and he knew that the latter body was also considering other proposals that that Society had put up to them. The Central Veterinary Society was formed for the benefit of its members and he was sure that any suggestion put forward, if it was for the benefit of the members of the Society, would be welcomed at their meetings. There was no need, however, to specify such items on the Agenda; they could always be brought up under "Any other business."

Foot-and-Mouth Disease—Dr. Galloway's Film and Lantern Demonstration

Dr. Ian A. Galloway, D.Sc., M.R.C.V.S., said that he had managed to secure an interesting film from Professor H. Magnusson, of Malmö, Sweden, and he hoped they would enjoy it. This film he had already shown to a meeting of the Comparative Medicine Section of the Royal Society of Medicine. Before the film was shown there were one or two points to which he would like to refer; it was possible that there might be quite a number of those present who had not had an opportunity of seeing a case of foot-and-mouth disease as it was scheduled, and they would be particularly interested. Although he himself had had ample opportunity of studying the disease in all its stages under experimental conditions and in the field in outbreaks on the Continent, he had the occasion to see only two infected premises in outbreaks in this country. In one of these outbreaks there were about 250 cattle, 500 sheep and 40 pigs on the farm and what had impressed him was the rapidity with which the animals were slaughtered and burnt and the source of infection thus removed. The disease had been confirmed to exist in one cow and at the time of slaughter only two others were showing signs of infection. He had been informed by the authorities of the Animal Health Division of the Ministry that the time which elapsed between confirmation of the existence of the disease on the premises and the complete incineration of the animals might be as short as 12 hours, even with so large a number of animals as in the instance cited and that the interval rarely exceeded 24 hours even under special circumstances. Efficient disinfection of the premises combined with a non-movement order, other police regulations and this rapid removal of the infected animals were the essential details of the "stamping-out" policy as carried out in this country by the Animal Health Division of the Ministry of Agriculture.

Table I

Outbreaks [Infected Premises] in European Countries during Epizoötic of Foot-and-Mouth Disease. Period 1937-1939.

Country.	1937.	1938.	1939.	Total, 1937-9.
§Germany ...	36,908	644,676	27,218 to August	708,802
Yugoslavia ...	14	147,913	297,164 to November	445,077
§France ...	*160,373	216,582	19,100 to November	396,055
Roumania ...	0	3,678	249,999 to November	255,677
Czechoslovakia	0	225,794	4,526 to February	230,320
Poland ...	1	225,625	2,056 to February	227,681
Holland ...	93,522	92,473	21,801 to October	307,796
Belgium ...	63,254	37,943	7,928 to November	109,125
Denmark ...	12	29,902	7,124 to November	37,038
Italy... ...	272	7,101	14,897 to June	21,998
Switzerland	273	7,799	5,694 to April	13,766
Sweden ...	0	†3,266	‡2,815 to November	5,075
§Great Britain	172	192	96 to December	451

*Epizoötic started to spread eastwards and northwards from centres in France.

†All outbreaks except one occurred during period September to December.

‡Majority of outbreaks occurred during period January to April. [76 during May and June and only 11 during period September and November.]

§Average cattle populations (approx.) :—

Germany ... 20 millions.
France ... 15 „
Great Britain 8 „

He would throw on the screen a lantern slide of a table giving the number of outbreaks in this country as compared with that of other countries in Europe during the epizoötic of foot-and-mouth disease which started to spread eastwards and northwards from centres in France in May, 1937, and had not yet terminated. It would be seen that the total number of outbreaks in Great Britain during the period, 1937 to 1939, was only 451, whereas Germany had had as many as 708,802 farms infected and many other countries also suffered severely. In addition to Great Britain, Sweden, Denmark and Switzerland also had "stamping out" policies but these policies differed in some essential details from that carried out in this country and attention would be drawn to these during the course of the projection of the film. Denmark and Switzerland were less favourably placed geographically than Sweden and Great Britain and this would possibly account to some extent for the higher number of outbreaks in the former two countries.

Sweden had been forced to abandon temporarily their "slaughter" policy in the Southern provinces owing to the rapid spread of the disease after it had reached there in September, 1938, and the use of immune serum had been applied intensively. Their "stamping out" policy was continued further north. It is interesting that although in Sweden there were 4,988 outbreaks during the period September, 1938, to April, 1939, there were only 87 during the period May, 1939, to November, 1939, and 76 of these occurred during May and June.

. . . . .

The film which he now proceeded to describe as it was thrown on the screen, he had seen for the first time during a visit to Sweden in 1937, and he thought that Professor Magnusson's son, who had taken the film, deserved to be complimented for an admirable production.

The film showed the symptoms and lesions of the disease observed in cattle, swine and sheep. In cattle vesicles occur chiefly on the tongue, on the lips, hard palate (these are accompanied by profuse salivation), on the nostrils, on the feet in the interdigital space and round the coronary band and at the heel; in cows lesions on the teats are common. In swine, similar lesions occurred on the feet causing lameness, in the mouth and also sometimes on the snout. Teat lesions are found in sows. In sheep any tongue lesions that may occur are generally transient and although vesicles might also be found on the hard palate in sheep, the most noticeable feature in sheep is the lameness due to the foot lesions and confusion with "foot rot" is to be avoided. The lesions of foot-and-mouth disease might be superimposed on those of foot-rot. The epizoötic of foot-and-mouth disease, 1937-39, on the continent of Europe was believed to have been associated with importation into France of infected sheep from North Africa, and many of such sheep show signs of foot-rot.

Other features of the film were pointed out. Especial attention was drawn to that part of the film depicting the severe secondary complications which follow the infection with the virus especially in dairy cattle, *viz.*, septic mastitis, arthritis, suppurative pneumonia and pleurisy, loss of the hoof and suppurative lesions elsewhere. These were very severe during the epizoötic, 1937-39, on the Continent and although the mortality in adult stock due to the primary effects of the virus was not usually more than about 1 to 3 per cent., yet large numbers of animals had died or had to be slaughtered as a result of secondary bacterial infections. The secondary invaders in many of these cases appeared to be *C. pyogenes*, with or without streptococci, as had been shown by investigators in France and elsewhere. Of course, in younger stock the mortality was much higher and might be as much as 80 to 100 per cent. in young calves, lambs and suckling pigs. The severe secondary complications following infection with foot-and-mouth disease, the high mortality rate in young stock and the great economic loss involved are not always fully realised.

The film also showed the disinfection of hides being carried out by covering them with common salt with 2 per cent. caustic soda added, and leaving them for a week. In Great Britain under normal conditions, the salvage of hides from cattle on infected premises is not undertaken. In special circumstances, *e.g.*, under the present war emergency conditions, some hides may be salvaged, but only those coming from animals not actually affected with foot-and-mouth disease. Disinfection of such hides is carried out as a precautionary measure, as they may have been in contact with the disease and have been superficially contaminated with virus. Disinfection is carried out by immersion in a 4 per cent. solution of washing soda. It was interesting to note that recently Dr. Dorothy Jordan Lloyd, Director of the British Leather Manufacturers Research Association, had informed him that experiments had been carried out which showed that such treatment did no noticeable damage to the hides. The process of disinfection of dairies and infected premises was also shown in the film; 2 per cent. caustic soda was employed in Sweden. In Great Britain the disinfection of infected premises was effected by the use of 4 per cent. hot washing soda.

A series of lantern slides were then shown by Dr. Galloway depicting the histological appearance of the early lesions of foot-and-mouth disease in the tongues of cattle and guinea-pigs.

Reference was also made to the lesions produced by another virus, that of vesicular stomatitis, on the chorio-allantoic membranes of hen eggs. This virus which affected chiefly horses, produced symptoms and lesions in cattle and swine which could not be differentiated from those of foot-and-mouth disease. However, while the virus of vesicular stomatitis could be propagated on the chorio-allantoic membrane of hen eggs, that of foot-and-mouth disease could not, although extensive trials had been made. The size value of the virus of vesicular stomatitis, as estimated by filtration and centrifugation analyses, was very much greater than that of the virus of foot-and-mouth disease. Both these points were most useful in differentiating the two viruses. There was believed to be also another virus which had produced in America a disease in swine clinically indistinguishable from foot-and-mouth disease. This had been designated vesicular exanthema of swine. All attempts at infecting cattle and guinea-pigs with this virus had failed.

Dr. Galloway also showed a table giving the relative number of outbreaks of foot-and-mouth disease in different European countries during the epizoötic, 1937-39. In May, the epizoötic started and is stated

to have been introduced by the importation of infected sheep from Algeria and Morocco and infected swine from Morocco. A study of the spread of the disease on the Continent strongly suggests that Holland, Belgium, Germany and Switzerland, were infected from France and the disease subsequently spread northwards and eastwards. There was no evidence of an almost synchronous "lighting up" of already existing endemic centres. It appears therefore that in foot-and-mouth disease there are strains of virus which spread rapidly and others which do not, this question being unrelated to virus type. This appears to be analogous to the position with regard to bacterial infections, as is suggested by the epidemiology of cholera and experimental evidence in *B. aertrycke* infection in mice (Topley).

During the first period of the epizoötic, only the Vallée O type of virus was recorded; towards the end of 1938, however, there were reports of animals which had been through the disease earlier succumbing to a second attack.

In Holland and the eastern parts of Germany they began to encounter a "Vallée A type" of virus. A Vallée A type has also been reported now from some other countries. This question of virus types had, of course, a great bearing on the question of immunity. It was possible also that some strains of the virus might have better antigenic, in the sense of immunising, properties than others. Again, one must consider that occasionally there may be animals which do not become strongly immunised as a result of infection and in which immunity wanes more quickly. Vallée had recorded two rare instances in which cattle had recovered from infection with foot-and-mouth disease and had succumbed to a severe second generalised infection with the same type of virus, one 40 days later and the other three months later.

Emphasis was placed on the great economic loss caused by the ravages of foot-and-mouth disease, and a table was shown giving the figures of the number of animals affected during 1937-38 in France. The loss involved meat, milk, butter, cheese; mortality rate in young calves, lambs and pigs; pregnant animals and animals which had to be slaughtered owing to secondary bacterial complications subsequent to the virus infection, etc., etc. This loss could not be fully appreciated by those who have only had experience of the disease in Great Britain.

Table II

Showing approximate Number of Animals Affected with Foot-and-Mouth Disease in France during 1937-38; also Estimated Economic Loss.

[*N.B.*—The economic loss to Germany for the same period was even higher and has been calculated at more than £80,000,000.]

France.

†Cattle affected	3,899,959
Sheep and goats affected ...	1,937,636
Swine affected	726,016
Total ...	6,563,601

Estimated Economic Loss = £32,000,000 (approximate).*

[Flesh, butter, milk, mortality especially in young stock, animals sacrificed following secondary bacterial complications, etc., etc.]

Cf. compensation paid to farmers for animals slaughtered under "stamping out" policy in Great Britain for period 1937-38, *viz.*, £483,054.

†*Cf.* number of animals slaughtered under "stamping out" policy in Great Britain for period during which the greatest number of outbreaks occurred, August 1st, 1937, to December 31st, 1938, *viz.*:—

Cattle ...	16,257	Pigs ...	10,396
Sheep ...	25,279		
Goats ...	20	Total ...	51,952

Discussion.

The display having been completed, the President said that he was sure they were all very indebted to Dr. Galloway for his very interesting contribution and the meeting was now open for discussion, though he regretted that little time remained.

Mr. S. L. Hignett said that he was very interested in Dr. Galloway's talk particularly as he was fortunate enough to be in Germany and Denmark doing sterility work in 1938. The epizoötic had only just got to Denmark, but in Germany he saw many cattle suffering from the after-effects of the disease and particularly foot lesions; in fact, at Dr. Gotze's bovine clinic in Hanover, the stock job was amputating digits and dressing feet.

He was interested to hear that the secondary invader in these cases was *C. pyogenes*. Earlier this year, in conjunction with Mr. Fisher, he was investigating an outbreak of what appeared to be typical foul of the foot; they took material, but did not find *B. necrophorus*, classically described as the cause of this trouble, but a pure culture of *C. pyogenes*. He (Mr. Hignett) visited a number of cow byres in Germany, Denmark and Switzerland and nowhere did the best byre he saw compare with the average byre in this country.

In reply to Miss Uvarov, Dr. Galloway said that vesicles appear before mastitis in cases in which the udder is involved. The mastitis is secondary and associated with bacterial invasion.

The President said that if no one else wished to contribute to the discussion, he might say that they were all very interested in the film shown by Dr. Galloway. One point of interest to him was the thorough measures those people were able to use on the Continent. It was specified that, in this country, the foot-and-mouth disease infection was not infrequently carried by the person and he thought the restriction of the personal element on the Continent was very striking. He was also very interested in the disinfection of dairies. So far as he was aware we did not, in this country, carry out disinfection of dairies receiving milk from herds which had been found to be affected with foot-and-mouth disease and he would like to know from Dr. Galloway if he thought this disinfection of the dairy premises advisable.

Proceeding, the President said he was interested to know that they sent their animals to abattoirs for slaughter instead of slaughtering on the farm. In this country, the Ministry, during recent years, had discontinued the salvage of carcases until the outbreak of this war when they reverted to the policy of salvage of in-contact animals. He desired to ask Dr. Galloway if, in view of the fact that the virus had been shown to persist in the bone marrow for some time, he thought it was a wise decision on the part of the Ministry to relax their restrictions. He would also be glad to know if there was any method of effectively disinfecting fodder which was on infected premises.

At one time the Ministry used to spray with 1 per cent. solution of formalin.

In regard to lesions in sheep, practitioners should always be wary if they met cases of foot-rot: in one case, at least, it was proved that foot-and-mouth disease was superimposed upon foot-rot. It should be remembered that sheep and also pigs might show no symptoms other than lameness.

Dr. Galloway, in reply to Mr. Bywater:—The regulations in force in this country for the control of the movement of individuals to and from an infected premises are very stringent as it is recognised that foot-and-mouth disease may be spread by farm workers, cattle dealers and others who may have had contact with infected animals, objects and material. The procedure of disinfecting passengers proceeding from Denmark to Sweden, to which reference had been made, was carried out only for a very short period and was abandoned owing to its impracticability and the realisation that the methods employed were not likely to be effective. Nothing which had been said detracted from the importance to be attached to the disinfection of and control of movements of those actually coming in contact with infected animals. In advice given to stockowners by the Ministry of Agriculture, it is pointed out that the infective agent of foot-and-mouth disease may be carried on the hands and clothes in ways which are unsuspected and on the boots which come in contact with manure and litter.

Further, if the disease exists or is suspected to exist on a premises the stockowners should warn their neighbours and not invite them to inspect and give an opinion on sick animals. They should also avoid going to see their friends who are stockowners and, above all, avoid going to stock markets and instruct their employees not to visit the employees of other stockowners.

Mr. Bywater had raised the question of the disinfection of dairies. In this country, the Foot-and-Mouth Disease Order states that: "Milk from any diseased or suspected animal shall not be moved from the infected place, and unless and until it has been boiled or otherwise sterilised it shall not be used for the food of animals. For the purpose of this rule, the expression 'milk' shall be deemed to include whey, butter milk, and separated milk. This rule shall not interfere with an animal suckling young." The occasion might arise that foot-and-mouth disease would be declared on a farm with dairy cattle. If any suspicion could be placed on the milk which might have gone off the premises prior to the declaration, *i.e.*, if there was any reason to suppose that milk which had been sent away from the premises had come from a cow in the incubative stages of foot-and-mouth disease, then steps would be taken by the inspector of the Ministry to ensure that efficient disinfection of the dairy, dairy vehicles, churns and utensils was carried out. Further, any milk which had been distributed would be traced and appropriate action taken.

The question of the salvage of what he termed "in-contact" animals had also been discussed by the President of the Society. Strictly speaking, the Ministry of Agriculture could not be said to have "reverted to the policy of salvage of in-contact animals." No animals are allowed to leave an infected premises for slaughter elsewhere. Animals showing symptoms of foot-and-mouth disease are still incinerated or buried (the latter method is necessary sometimes owing to lighting restrictions) following slaughter which is carried out immediately after the existence of the disease has been confirmed on the premises. Owing to the special war emergency conditions obtaining at present and in suitable circumstances, some salvage of the carcases of healthy animals is carried out, but it must be understood that this procedure is imposed by the exigencies of the moment, therefore, is not a change of policy and applies only to animals clinically healthy, without thermal reactions and at the time of slaughter entirely free of signs of infection with foot-and-mouth disease. The question of the persistence of the virus in the bone marrow which is known to occur in infected animals, therefore does not arise.

The Ministry arranged the fumigation with formalin, or, in certain circumstances, the spraying (with 5 per cent., not 1 per cent.) of fodder or bedding. The circumstances of each case were carefully considered and where the nature of the contamination was such that adequate disinfection was not practicable, the material (fodder or bedding) was destroyed and the owner compensated.

Next Meeting.—It was unanimously agreed that the next meeting of the Society should be held at the Royal Veterinary College.

Vote of Thanks.—The President announced that the business of the meeting was now concluded but, before the members dispersed, he proposed a very hearty vote of thanks to Dr. Galloway for his exceedingly instructive talk and film demonstration; also to Mr. Williams who had so kindly operated the lantern. These votes of thanks were passed with acclamation and a similar tribute was paid to the President for his conduct of the proceedings.

J. W. H. Holmes, *Hon. Secretary*.

MILK FROM ROUGHAGE

Some interesting facts on the feeding of dairy cows without concentrates are contained in a report on the Utilisation of Legumes in Kansas, U.S.A. (states the *Farmer and Stockbreeder*). Over a period of several years and at four stations 15 cows were fed on lucerne hay only, to compare their yields with their previous records on ordinary rations. They had access to bone meal, and their average milk yields were 57 per cent. of what they were on full feed; butter fat was 60 per cent. of the previous records. Throughout the whole period of a lactation the fall of yield was more rapid than under full feed conditions, no period of stability being reached as might possibly have been expected.

From the conversion ratio it appears that the nutrients derived from alfalfa were about as efficient for milk production as that derived from a normal ration. The capacity to eat enough was a limiting factor, about 15 per cent. of the hay offered being refused. 69 lb. per day was the highest individual consumption.

After two years the cows had a well-fed appearance, and breeding was not affected. Discussing the economics of a greater use of roughage, the report states that production would be lowered, but the cost of the ration could also be low enough to make production more profitable.

NOTES AND NEWS

The Editor will be glad to receive items of professional interest for inclusion in these columns.

Diary of Events

Jan. 29th.—Meeting of the Editorial Committee, N.V.M.A., at 36, Gordon Square, W.C.1, 4 p.m.

Feb. 1st.—Meeting of the Central Veterinary Society at the Royal Veterinary College, N.W.1, 2.30 p.m.

Feb. 8th.—Annual General Meeting of the Lincolnshire and District Division, N.V.M.A., at Grantham, 2 p.m.

Feb. 29th.—Voting Papers issued to overseas members (R.C.V.S. Council Election).

Mar. 18th.—R.C.V.S. Examinations at Reading.

April 1st.—R.C.V.S. Annual Fees due.

May 9th.—Last date for nominations, R.C.V.S. Council Election.

May 14th.—Provisional date for commencement of R.C.V.S. Animal Management Examination.

May 23rd.—Issue of R.C.V.S. Annual Report and Voting Papers.

May 30th.—Last date for receipt of R.C.V.S. Council Election Voting Papers.

June 6th.—**R.C.V.S. Annual General Meeting.** Victoria Veterinary Benevolent Fund Annual General Meeting.

June 27th.—R.C.V.S. Written Examinations begin.

July 3rd.—Provisional date for commencement of R.C.V.S. Oral and Practical Examinations.

* * * * *

Supplementary Supplies of Petroleum for Veterinary Surgeons

Following is the text of a communication on the above subject, dated January 13th, 1940, addressed to all Liaison Officers by the General Secretary, N.V.M.A.:

"At a meeting of the Finance and General Purposes Committee held on January 9th a suggestion was made that the work of Liaison Officers would be facilitated if the wishes of each Liaison Officer in regard to the submission of applications for supplementary supplies of petrol were made known through the columns of the *Veterinary Record*. It was decided to adopt this suggestion and I should therefore be glad if you would be so good as to let me know what instructions you would like to be included in the list which it is proposed to publish for the guidance of members.

"For your information I would inform you that several members acting as Liaison Officers happened to be present at the above meeting and intimated that their arrangements with the Divisional Petroleum Officer rendered it unnecessary for applications for supplementary supplies to be sent to them; the procedure followed in their area is that all applications go direct to the Divisional Petroleum Office. Members of the profession in these areas mark their envelopes 'Veterinary Surgeon' or 'Veterinary Profession.' They are then dealt with by one person and it is only necessary for the Liaison Officer to confer with the D.P.O., in exceptional cases referred to him by the Divisional Petroleum Office.

"The Committee desire me to take this opportunity of expressing to you their grateful thanks for all you are doing to help the profession in this matter."

The replies received to date to the request contained in the first paragraph of the Secretary's letter are published below; others will be inserted in later issues.

Eastern Division (Professor T. Dalling, M.A., M.R.C.V.S., Cambridge): "All applications should go direct to the Divisional Petroleum Officer, at Douglasbank, Lathom Road, Cambridge, the word 'Veterinary' being put in the left-hand corner of the envelope.

"If any difficulty arises subsequently, members should then communicate with me, as Liaison Officer, at the Institute of Animal Pathology, Cambridge."

North Midland Division (Mr. L. Auchterlonie, M.R.C.V.S., Nottingham): "Will veterinary surgeons in making application to the Petroleum Officer, Nottingham, for supplementary supplies of petrol for the ensuing period please write clearly on the outside of the envelope 'Veterinary Surgeon,'* or place the letters E.V. in red ink or red pencil there, as this considerably aids departmental work."

North Wales (Mr. Howel V. Hughes, B.V.Sc., M.R.C.V.S., D.V.H., The University, Liverpool): "In connection with instructions to practitioners, I think it would be wise if, when application is made for supplies for more than one car, full details are given of the purposes for which each car is used. Generally speaking we find that the information given is far too scanty, and is not helpful. Details of previous allowances of petrol, *including date and amount*, should also be given, and particularly in the case of any change of car. Petrol receipts for previous months are also valuable evidence."

Welsh Division (Mr. T. H. Jones, M.R.C.V.S., Llandilo, Carms.): "My greatest difficulty as Liaison Officer is to get veterinary surgeons to send their applications in good time and in proper order. They often leave it until they have only two or three units left. They also, too often forget either to send their Registration Book, their application form or their Ref. No.

"I quite agree with the suggestion of the Council that applications for supplementary ration should go direct to the D.P.O.; additional supplementary rations (or any difficulty that they may have) could be sent through the Liaison Officer.

"I would, however, like it emphasised that veterinary surgeons when they are applying either to the D.P.O. or the Liaison Officer should particularly remember to send: (1) their Registration Book; (2) application form R (MS) 1; (3) their ref. No.

"I know that they have been told to do this but so many still forget. The (3) should always be sent with every application."

North-Western Division (Mr. J. Holroyd, F.R.C.V.S., D.V.S.M. (Vict.), Simmons Street, Blackburn): We understand that members in this area served by the Manchester Office have already been supplied by Mr. Holroyd with application forms and these should continue to be returned to him.

Midland Division (Mr. H. W. Dawes, M.R.C.V.S., West Bromwich): "Will veterinary surgeons who receive their petrol supplies through the Divisional Petroleum Office, St. Martin's Street, Birmingham, please note that applications for supplementary supplies of petrol can now be sent direct to the Divisional Petroleum Officer instead of through the Liaison Officer.

"Will veterinary surgeons please write the word 'Veterinary' in blue pencil on the top of Form R(M.S.)1,

*The Association will shortly be supplying Liaison Officers with gummed labels, 2½ in. by 1 in., with the word "Veterinary" printed in blue. On receipt, these gummed labels should be affixed to the top of Form R (M.S.) 1, and also to the outside of the envelope containing any communication.

and also mark the outside of the envelope 'Veterinary Surgeon' in blue pencil. A supply of small adhesive labels coloured blue with the words 'Veterinary Surgeon' will be supplied for this purpose in the future.

"It is hoped that all veterinary surgeons will pay particular note to the contents of a circular letter from the Divisional Petroleum Officer, a copy of which is attached to the coupons issued for the supplementary allowance up to March 31st, 1940. Strict attention to these points will entail a saving of time in the issue of supplementary allowances."

Following is the text of the letter from the Divisional Petroleum Officer:—

> "With reference to your application for petrol coupons, I have pleasure in forwarding herewith coupons for.....units which represent your allowance up to March 31st, 1940.
>
> "In order that applications from veterinary surgeons may be dealt with as expeditiously as possible, it has been decided that the dates of issue of supplementary allowances should be different from other classes of consumers. In order to effect this change a further supplementary allowance for the month of April will be issued to you and it will *not be necessary for you to make application for it.*
>
> "Application for supplementary coupons for use during the next rationing period which in your case will be from May 1st to June 30th, should be made on a fresh application form (accompanied by the Registration Book), and should be submitted to this office *on or about April 10th*, after you have obtained the basic ration book for the vehicle from a Post Office or Local Taxation Office."

Southern Division (Mr. G. P. Male, M.R.C.V.S., Reading): "I would be glad if those members of the veterinary profession communicating with me would always give the Divisional Reference No., and write 'Veterinary Surgeon' on the envelope. This would prevent delays and considerably facilitate the work of his office.

"Also, towards the end of the period, when supplementary supplies will be required, members are asked kindly to apply in good time, as it is quite impossible with the thousands of applications in a very large district for the Divisional Office to deal with the mass of applications that come in during the last few days.

"All veterinary surgeons when making applications should send their registration book and state clearly their previous average of petrol used the previous twelve months and how much they require.

"Some veterinary surgeons, instead of putting the Divisional Reference number put the number on their petrol books; will they therefore please state their Divisional Reference S/E Number on page 8 of their registration book."

South-Eastern Division (Mr. Alex. Thomson, M.R.C.V.S., Beckenham): "All requests should be sent directly to the D.P.O. with 'Veterinary Surgeon' on the envelope; veterinary surgeons should get in touch with me only when such requests are disallowed or delayed. When it is necessary for them to write to me the details of their application should be submitted."

South-Western Division (Mr. C. E. Perry, F.R.C.V.S., Bristol): "Applications for supplementary supplies should be sent direct to the Regional Petroleum Office, and marked 'Veterinary Surgeon.' Only in cases where supplies are insufficient need they send direct to me."

North of Scotland Division (Major A. Spreull, D.S.O., T.D., M.R.C.V.S., Dundee): "All applications should go direct to the Divisional Petroleum Officer. I would recommend the following to minimise correspondence and ensure immediate attention: (1) All correspondence envelopes to be marked conspicuously on left side top of envelopes 'Veterinary Surgeon.' (2) Registration Book must be sent with Application Form R(MS)1, and all appeals. (3) When appeals are lodged answer each question in full. (4) In appeals for additional allowance always state units in hand, so that the Petroleum Officer may send sufficient units to carry on with until the appeal has been forwarded to and returned from Headquarters."

South-East Scotland Division (Mr. A. Gofton, F.R.C.V.S., Edinburgh): "Application for supplementary supplies of petrol is made on R (MS) 1, to the D.P.O.

"If supplementary ration proves insufficient, veterinary surgeons should send a written appeal to the D.P.O. for further supplementary ration, at the same time forwarding me a copy. This appeal should give an estimate of the additional petrol required for the rationing period.

"The D.P.O., if he is in any doubt, telephones me giving me details of the application and seeking my advice as to the additional grant to be made.

"It should be emphasised that a veterinary surgeon is only one of many applicants for supplementary rations and that his application for a further supplement should be lodged at least a week before his supplies are likely to be exhausted. It is not fair to expect the D.P.O. or the Liaison Officer to remit coupons for additional supplies by return of post."

* * * * *

RIDING ESTABLISHMENTS ACT, 1939

The Council of the National Veterinary Medical Association, at its quarterly meeting held on January 10th, 1940, approved the following recommendations:—

1. That the *minimum* fee for inspections under the above Act should be £1 1s. 0d. *plus* mileage.
2. That there should be a minimum of four inspections per annum.

The Association is communicating with the appropriate Local Authorities to this effect and it is hoped that this will lead to the above recommendations being generally adopted.

* * * * *

SUPPLIES OF DRUGS AND CHEMICALS

Should any members experience difficulty in obtaining supplies of drugs or chemicals which are manufactured in this country they are requested to notify the General Secretary, N.V.M.A., 36, Gordon Square, W.C.1. Steps will then be taken to explore the situation.

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VETERINARY COUNCIL (EIRE)

At a meeting of the Veterinary Council of Ireland held in Dublin on January 10th (Mr. A. A. Donnelly, President, presiding), a number of cases of alleged infringements against the Veterinary Surgeons' Act (1931) were dealt with.

R.C.V.S. OBITUARY

Murray, James, Elvanfoot, Lanarkshire. Graduated Edinburgh, November 22nd, 1879. (H.A.S. Cert. 1876.) Died December, 1939.

Penhale, Percival John Dennis, Castle Street, Barnstaple, Devon. Graduated Edinburgh, December 23rd, 1905. Died January 8th, 1940.

Mr. James Murray, M.R.C.V.S.

Mr. James Murray was well known on Deeside where he practised for many years. He belonged to Castletown, Caithness, and after graduating he spent a short time in Yorkshire and thereafter went to Deeside, where he was in practice for over 50 years—first at Torphins and subsequently at Banchory. He did much valuable work for the farming community during that period and was held in high esteem for his professional skill and for his kindly and obliging disposition.

Mr. P. J. D. Penhale, M.R.C.V.S.

Mr. Penhale was a son of the late Alderman William Penhale, a former Mayor of Barnstaple, and carried on the practice when his father died about 1908. He was well known in North Devon, having practised for a great number of years, and was veterinary inspector for the borough of Barnstaple, and also an inspector under the Ministry of Agriculture.

In his younger days Mr. Penhale was a very keen sportsman, having played cricket for the Rayleigh (Barnstaple) and North Devon Clubs and rugby for Barnstaple, and he also used to take part in local walking races many years ago. He was a proficient billiards player.

He leaves a widow and four daughters, to whom deep sympathy is extended in their bereavement.

The Funeral

The funeral took place at Barnstaple Parish Church on January 10th, the service being conducted by the Rev. C. Purves. Interment was in Barnstaple Cemetery.

Among the family mourners were Mr. Richard E. L. Penhale, J.P., M.R.C.V.S., of Torrington, and Captain Richard Hugh Penhale, O.B.E., M.R.C.V.S., and Mrs. Penhale, of Holsworthy.

Sympathisers present included the Mayor of Barnstaple (Mr. C. F. Dart), the Deputy Mayor (Mr. F. Elliott), Lord Poltimore, Ald. A. N. Oliver, Ald. J. Smale, Ald. W. J. Cooke, Mr. F. J. Broad (Town Clerk), Mr. H. H. Hawkins (Secretary to Barnstaple Education Committee), Ald. T. Dunn (Chairman, No. 1 Area, Devon War Agricultural Committee), Dr. M. Killard-Leavey, Dr. J. R. Harper, Dr. F. L. Thomas, Major W. Ascott, O.B.E., T.D., J.P., M.R.C.V.S., Capt. H. M. Webb, M.R.C.V.S. (representing the Western Counties' Veterinary Medical Association) and Mr. T. H. R. Irwin, M.R.C.V.S.

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Funeral of Capt. W. L. Little, F.R.C.V.S.

The funeral of Capt. W. L. Little, whose death we recorded with deep regret in our issue of January 6th, took place at the Reading Municipal Cemetery on Wednesday, January 3rd, 1940, the Rev. Guy Daniel (assistant priest of St. Giles's) officiating. Interment followed in the cemetery.

Among the large company present at the church were Professor G. H. Wooldridge, F.R.C.V.S., M.R.I.A. (President of the Royal College of Veterinary Surgeons), Mr. G. P. Male, M.R.C.V.S., Mr. H. Bell, M.R.C.V.S. (representing the Royal Counties Veterinary Medical Association), Mr. R. A. Willett, M.R.C.V.S., Mr. R. J. Hewer, M.R.C.V.S. Colonel H. Greenfield, O.B.E., M.R.C.V.S., Mr. J. Bell M.R.C.V.S. (Maidenhead), Mr. J. A. Craft, M.R.C.V.S., Mr. R. M. Davidson, M.R.C.V.S., Inspector C. Bartlett (representing Reading, with the Berks, Hants and Oxon Border Branch, R.S.P.C.A.), Colonel L. T. Goodenough (President of the Reading Rotary Club), Mr. C. J. Lund (Vice-president), Mr. W. G. Warwick and Mr. A. M. Bramall (Reading Rotary Club).

Among the floral tributes were wreaths from Mr. and Mrs. Male, the Royal Counties Veterinary Association, assistants and staff of Queen's Road, Rotary Club of Reading and the Branch Committee of the Royal Society for the Prevention of Cruelty to Animals.

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GENERAL OBITUARY

Mr. Langley Hobbs

The many readers of this journal to whom he was a familiar and much-respected figure will have learned with deep regret of the recent death, following a motor accident, of Mr. Langley Hobbs, of Messrs. John Thornton, Hobson & Co., the well-known English live stock auctioneers.

Mr. Hobbs, who was 57 years of age, gained his first experience in the auctioneering business with Messrs. Harrison in Carlisle, and a few years afterwards—in 1904—joined Messrs. John Thornton & Co., becoming a partner in 1921. For a long period of years Mr. Hobbs was notably associated with the selling and buying of pedigree stock. His family had a renowned association with Shorthorns. His grandfather was Charles Hobbs, who made Maiseyhampton famous, and his father, Robert W. Hobbs, in his youth moved from home to make Kelmscott equally noted in the Shorthorn world. It was here that Mr. Langley Hobbs gained his first experience of farming and the breeding of pedigree stock. Mr. Hobbs had had longer service with his firm than any present member thereof or of the staff. His death breaks a complete link of association with John Thornton, the founder of the firm, with whom he worked for several years.

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PERSONAL

Birth—Buckner. On January 1st, to Mr. and Mrs. C. A. Percy Buckner, 49, Christian Fields, Norbury, S.W.16, a daughter—both well.

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"DOLLY"—A DOUBLE-HEADED LIVING COW

The following account is printed for the information of our readers on a matter which has attained some note in the U.S.A. The account is taken from an American publication, *The Family Circle*, August 4th, 1939, and was sent to us by Mr. James A. Bradley, M.R.C.V.S., of Kirkcudbright.

"Dolly is a black and white, 3-year-old cow, whose sire was a registered Holstein and whose dam was half Red Poll, half Guernsey. Her extra head projects from the left side of her neck, and though it's only slightly smaller than the regular one, it does not cause her to lean toward that side. She has four eyes which blink simultaneously, two mouths, two tongues, and two sets of teeth, and she can give forth a double moo that sounds like a muted foghorn. She breathes through both sets of nostrils and can drink with both mouths, although she favours the regular one for eating and chewing her cud. Dolly's regular head is female, while the extra one is male. She has three horns. The centre one is a bit crooked and the left one was broken off in a tangle with a barbed-wire fence.

"Dolly is a freemartin, which means that she is never in heat and cannot reproduce. But otherwise she is way above normal. She has a fine disposition. She weighs 1,400 pounds—a good 400 more than the average cow of her age. She and her brother were the heaviest set of twins ever known to California veterinarians.

"This animal has an unusual background. Twin calves are pretty rare, and yet the same year she was born, her father, Bob, a 2,000-pound bull, was the sire of *seven* sets of twins. Dolly's mother, Red, had five other calves but no twins. One of Dolly's great-grandmothers was a 12-gallon registered Holstein. The value of Dolly as an exhibit may be judged by the fact that Mr. Thomson sold the Blue Ribbon Dairy Farm and its 100 head of Holsteins and Guernseys because Dolly was bringing in more money than the farm. When she was shown at San Diego Exposition an attempt was made to insure her with Lloyd's of London for $200,000 but after some intensive research that firm decided that there was little chance of the calf's living to maturity, and so the application was turned down. Rarely does a two-headed animal survive more than a few days, and Dolly is the only known one to live three years. She eats 16 pounds a day—twice as much as an ordinary cow—of a prepared feed, and 20 pounds of hay."

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SUPPLIES OF VETERINARY COD-LIVER OIL

The Ministries of Food and Agriculture have approved a scheme submitted by the British cod-liver oil industry designed to ensure adequate supplies of veterinary cod-liver oil for the next six months. An assurance has been given by the industry that there will be no difficulty in meeting the normal demands for pure cod-liver oil of medicinal quality. The scheme involves the dilution of certain stocks of cod-liver oil of a high vitamin potency, which are in the hands of producers, with a suitable marine oil supplied by the Ministry of Food. The mixture, to be known as "controlled cod-liver oil mixture," will fulfil certain minimum technical standards, both as regards vitamin content and other characteristics.

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FOOT-AND-MOUTH DISEASE

The existence of foot-and-mouth disease has been confirmed among cattle at Tollesbury, Essex. The area subject to restrictions in the movement of animals lies in the counties of Essex and West Suffolk, and includes part of the existing infected area around East Horndon, Essex. On Wednesday an outbreak among pigs was confirmed at Hartlip, near Gillingham. The area subject to restrictions lies wholly in Kent.

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UNIVERSITY OF LONDON EXAMINATIONS IN VETERINARY SCIENCE

Following is the Pass List of the December, 1939, Examinations in veterinary science held by the University of London:—

First Examination (for internal students)—Brown, Kenneth Edgar, Royal Veterinary College and Northern Polytechnic.

First Examination (for external students)—Tayler, Reginald Cervante, Royal Veterinary College.

* * * * *

LIVE STOCK INDUSTRY: WAR-TIME SUSPENSIONS

Control of fat stock and meat by the Ministry of Food, which began on Monday, necessitates the suspension of certain provisions of the Live Stock Industry Act, 1937, and the closing down of the Cattle Subsidy Scheme and the suspension of the functions of the Live Stock Commission and the Live Stock Advisory Committee. This has been effected by an Order made by the Minister of Agriculture and Fisheries, which brought Part III of the Defence (Agriculture and Fisheries) Regulations, 1939, into force on Monday. The prices payable by the Ministry of Food for fat cattle under the Control Scheme will include a sum equivalent to the subsidy payable under the Cattle Subsidy Scheme.

The Ministry's control over the sale of pigs and the production of bacon has also made it necessary to suspend from that day the principal provisions of the Bacon Industry Acts, 1938 and 1939, including the regulatory powers of the Bacon Development Board and the Pigs and Bacon Marketing Boards. The Boards will not be disbanded, but their remaining functions will be delegated to emergency committees, whose principal duties will be to safeguard the assets of the boards in the interests of registered producers.

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ARMY VETERINARY SERVICE

London Gazette—War Office—Supplementary Reserve of Officers

January 16th.—Maj. J. Bradley having attained the age limit, retires and retains his rank, with permission to wear the prescribed uniform (January 17th).

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FEEDING STUFFS FOR LIVE STOCK

"What every farmer wants to know," says the *Farmers' Weekly* in its current issue, "is whether any feeding stuffs are in fact being imported and, if so, where they are to be obtained. If feeding stuffs are coming into the country and are not being released for consumption, then they must either be going into store or being re-exported. It is impossible to believe that the Government would allow feeding stuffs, once landed in this country, to leave it again, and difficult to believe that they could be put into store while farmers everywhere are clamouring for supplies. If there is an idea in 'official circles' that supplies should be stored against a rainy day, then it is high time those 'official circles' were taken out and shown just how hard it is raining now and has been for weeks and months past.

"Feeding stuffs are controlled by the Minister of Food. Has Mr. Morrison any idea of what is happening on the farms to-day? It should be brought home to him that thousands of poultry and hundreds of pigs are actually starving for want of feeding stuffs; that every market is getting more and more entries of immature, unfinished live stock of all classes; that the breeding stock on which depends our ability to produce the nation's food in the future, is dwindling rapidly—slaughtered because their owners can't feed them.

"The Ministry of Agriculture can offer little help. We are advised to search for alternatives (acorns for pigs were brightly suggested a week or two ago) and to arrange for more home-grown food. May we point out:—

Firstly, that there are few things that are eatable—and some that aren't—that we have not already invited our pigs and poultry to substitute for the ordinary food they expect.

Secondly, that, as we seem to recall having pointed out before, crops take time to produce and stock doesn't thrive while waiting for its food to grow. And—

Thirdly, that it was only in September that the Minister of Agriculture assured farmers (on what evidence we do not know) that there were sufficient stocks of feeding stuffs available.

"Mr. Morrison must take farmers into his confidence and tell them exactly what they must expect, whether more or less and how much more or how much less."

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THE SLAUGHTERHOUSE SCHEME

"Under the new live stock control there is no change which has caused more discussion than that connected with slaughterhouses. I believe that in the last war there were about 7,000 to 8,000 of these. No one seems to know really how many slaughterhouses there are in the country, for 'slaughterhouse' includes a great

variety of premises," writes " M.B.A." in the *Farmer and Stockbreeder*.

" For this war, however, the Ministry of Food has arranged a list of 750 centres. This is purely a provisional list with which the scheme will start. The centres have been carefully chosen on the grounds of capacity, equipment and convenience to the neighbourhood they will serve. Local tribunals are being set up. They will hear claims for additional or alternative slaughterhouses, claims which will be considered in the light of experience. The tribunals will not operate until about mid-February.

" The Ministry hopes to effect considerable changes in the disposal of the offals and fat. It is admitted that the trade is in a better position to handle the fats than anyone else. But the trade's disposal would be through the ordinary channels, whereas the Ministry has now got to consider other claims—such as explosives.

" It is hoped to secure valuable drugs for the nation by a proper handling of various glands. These drugs have mostly come from America, Germany, and other countries which have adopted central slaughtering, and since the war prices have risen considerably. To secure them it is necessary that animals should be handled in large quantities, and special men and methods have to be employed. To retain the full potency the extracts have to be put into cold store immediately."

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WINDSOR LAD TO RETURN TO STUD

It will be remembered that Windsor Lad, one of Blandford's greatest sons and winner of the Derby and St. Leger in 1934, was withdrawn from stud last season owing to an affection of the head. This proved to be an infection of one of the sinuses of the head, a local lesion, and one which is frequently found in horses and human beings. Windsor Lad has responded satisfactorily to the operative measures which were necessitated, and he will resume his stud duties this next season.

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BRIGHT HORSE PROSPECTS

Horses had not been a very good trade in most parts of the country for the first six months of 1939 and breeders were beginning to have serious doubts as to prices in the future. With the declaration of war, however, and the intensified food production campaign that followed it, values at once hardened. We now seem to have settled down to a fairly satisfactory level of working horse prices with good animals selling at about 10 or 12 per cent. higher figures than before September 3rd. It is, of course, not only the farm demand that has stimulated the horse trade—petrol rationing and vehicle requisitioning have brought many of the town buyers back on the market.—*Farmer and Stock-breeder*.

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SECOND CONGRESS FOR THE STUDY OF ARTIFICIAL INSEMINATION IN ANIMALS

At the instigation of the Istituto per la Fecondazione Artificiale degli Animali (Milan) and the Sindicato Nazionale Fascista dei Veterinari (Rome), the Second National Veterinary Congress for the Study of Artificial Insemination in Animals will be held at Foggia (La Pouille) on May 25th and 26th, 1940.

The congress assumes an aspect of more than usual interest and importance in view of the general recognition of artificial insemination as the complement to improved animal husbandry.

The General Secretaryship has again been entrusted to Professor T. Bonadonna, and all enquiries should be addressed to him at the Istituto per la Fecondazione Artificiale degli Animali, Via Monte Ortigara 35, Milano. It is hoped that numerous Italian experts will take part, together with leading authorities from other countries.

CORRESPONDENCE

Letters to the Editor should reach the Office not later than by the first post on Tuesday morning for insertion in following Saturday's issue.

The views expressed in letters addressed to the Editor represent the personal view of the writer only and must not be taken as expressing the opinion or having received the approval of the N.V.M.A.

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MEAT INSPECTION AND ITS CONTROL

To the Editor of the Veterinary Record

Sir,—I hope that the readers of the *Veterinary Record* are interested in a paragraph under " Legal Notes " which appeared in the last issue, and which reads as follows:—

> " *Sale of Tuberculous Meat.*—' I do not say anything against meat inspectors but this is the only civilised country where the inspection of meat is not carried out by qualified veterinary surgeons,' said Mr. C. Hodgkinson (solicitor) at Wednesbury Police Court recently."

A question often asked by veterinary surgeons and others interested in the meat trade both at home and in foreign countries is: How is it that Great Britain is satisfied in being less advanced than other countries with its meat inspection system? My answer generally is that members of the veterinary profession in Great Britain have the same power as their colleagues in other countries to demand their rights, but that apparently they are satisfied to allow others to attend the work which in most countries is controlled by the veterinary profession.

During one of my visits to this country about three years ago I met a meat inspector in an important market town who asked my opinion regarding a carcase of pig which he had condemned, but the butchers had objected to his verdict on the grounds that this carcase had been brought in, passed as sound, from a slaughterhouse outside the jurisdiction of this inspector. I suggested that he should consult a prominent veterinary surgeon who lived in the town, but was told that only the word of the Medical Officer of Health could be accepted as final in such cases.

A Medical Officer of Health in a county in Wales who used to discuss the question of meat inspection with the writer, admitted that he had to give his final verdict on samples of suspected meat, although as he said, it should be under the veterinary and not the medical service.

Let us compare the meat inspection law of our friends across the sea, and in order to clarify matters, I quote one case out of many, as far back as 20 years ago. A large exporting firm in Puerto Cabello exported a quantity of lard to the island of Puerto Rico, which was accompanied by a certificate of the Medical Officer of Health at the port of origin. This certificate was rejected, whereupon a second certificate was despatched containing the signatures of nearly all the medical men of the town in addition to that of the Medical Officer. This elaborate certificate was also not accepted in lieu of a veterinary certificate, and the consignment of lard was in danger of either being dumped or returned to Puerto Cabello. Eventually the writer was asked for a certificate and the lard was accepted.

I can well remember a good number of years ago when Professor Share Jones endeavoured with his unfailing energy to enlighten the profession on this important question in order that they could claim their proper status regarding meat inspection. I am not certain whether he succeeded at all the meetings he attended even in securing a member of the profession to second his proposition.

Space will not permit me to dwell further on this subject, so I conclude by quoting from E. W. Wilcox on Reform:—

" The time has come when men with hearts and brains
Must rise and take the misdirected reins."

Yours faithfully,

" De Lejos," Edward Morgan.
Crest Road,
Hayes, Kent.
January 13th, 1940.

THE LONDON ZOOLOGICAL SOCIETY AND THE VETERINARY PROFESSION

To the Editor of the Veterinary Record

Sir,—I have read in the Press, with some astonishment, that although the Zoological Society of London considered there was mystery as to the cause of the Giant Panda's death, that Society felt that an investigation could best be carried out at the laboratories of the Royal College of Surgeons. At the last meeting of Council N.V.M.A. no opportunity occurred for me to raise this question, but I have often wondered whether that body could take any useful steps to remove the slur and injustice which are being continually cast upon our own profession by the executive of the Zoological Society.

When the newspapers lay such emphasis upon the fact that the medical profession is busy making *post-mortem* and bacteriological investigations into animal diseases and deaths, the public are naturally led to believe that veterinarians are not yet capable of undertaking such tasks. It is no question of pecuniary loss to us which exercises my mind, but only the highly important one of loss of prestige which inevitably we must sustain by such actions. If my memory is not at fault, I believe it was not until a veterinary pathologist was called in that the deaths of several elephants which occurred a year or two ago were diagnosed as due to anthrax.

We may rightly ask who in the community is more likely to be *au fait* with diseases of animals than the veterinary graduate?

On the face of it, it is an astounding situation to find that no eminent veterinarian is on the permanent whole-time staff of such a large and important animal institution as the London Zoo. It appears that as soon as any intricate or difficult matter arises, which is of public interest, we hear only of the Royal College of Surgeons or someother medical authority being asked to tackle it. Can this be the state of affairs in other countries? I doubt it!

Yours faithfully,
H. Kirk.

658, Finchley Road,
N.W.11.
January 15th, 1940.

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V.V.B.F. CHRISTMAS APPEAL

To the Editor of the Veterinary Record

Sir,—I am delighted to be able to tell you that more than £70 was received in response to my appeal for Christmas gifts. This sum has been distributed in gifts, varying from £1 to £4 according to circumstances, and letters of gratitude have been received from all the recipients. It has enabled some of them to buy warm clothing for the winter, of which they were in great need.

Further subscriptions were received too late for distribution before Christmas, but those will be retained as the nucleus of the fund I shall hope to collect next Christmas for the same purpose.

I wish to thank you, Mr. Editor, for the support you gave to my appeal and all those members who responded so generously.

Yours sincerely,
J. W. Brittlebank,
President.

Wimborne House,
Sawbridgeworth.
January 4th, 1940.

DISEASES OF ANIMALS ACTS, 1894 to 1937, and AGRICULTURE ACT of 1937 (PART IV)

SUMMARY OF RETURNS

Period.	Anthrax.		Foot-and-Mouth Disease.		Parasitic§ Mange.		Sheep Scab.	Swine Fever.	
	Outbreaks confirmed.	Animals attacked.	Outbreaks confirmed.	Animals slaughtered as diseased or exposed to infection.	Outbreaks confirmed.	Animals attacked.	Outbreaks confirmed.	Outbreaks confirmed.	Swine slaughtered.
	No.	No.	No.	No.	No.	No.	No.	No.	No.
Period 16th to 31st Dec., 1939	17	18	12	1,014	2	3	14	160	88
Corresponding period in ...									
1938	36	39	11	1,123	—	—	14	54	23
1937	51	54	58	7,953	5	6	8	26	21
1936	37	41	8	486	8	9	33	61	25
Total 1st January to 31st Dec., 1939	699	792	99	11,761	35	76	276	3,288	3,106
Corresponding period in									
1938	830	1,235	190	24,012	46	76	222	951	743
1937	743	879	187	31,586	115	179	253	982	584
1936	468	551	67	5,316	111	254	255	1,873	1,270

Note.—The figures for the current year are approximate only. § Excluding outbreaks in Army Horses.

Tuberculosis (Attested Herds) Schemes

The number of Attested Herds, *i.e.* herds officially certified as free from tuberculosis, as at 31st December, 1939, was as follows :— England 3,310 ... Wales 7,923 ... Scotland 2,641 ... Total (Great Britain) 13,874

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